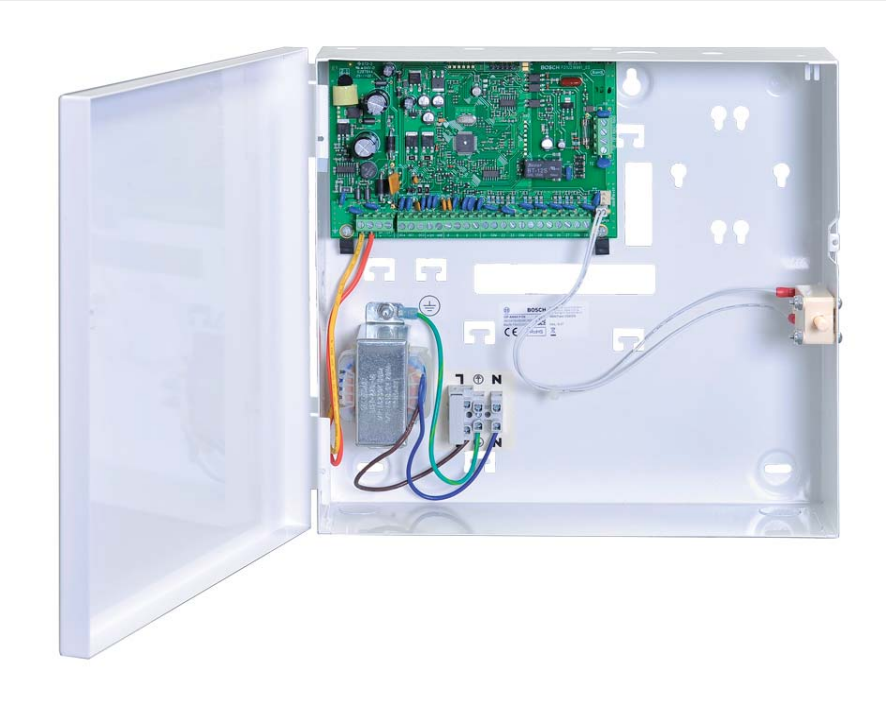


AMAX panel 2000 / AMAX panel 2000 EN

F.01U.241.127

BOSCH

en Installation Manual

1 Graphics

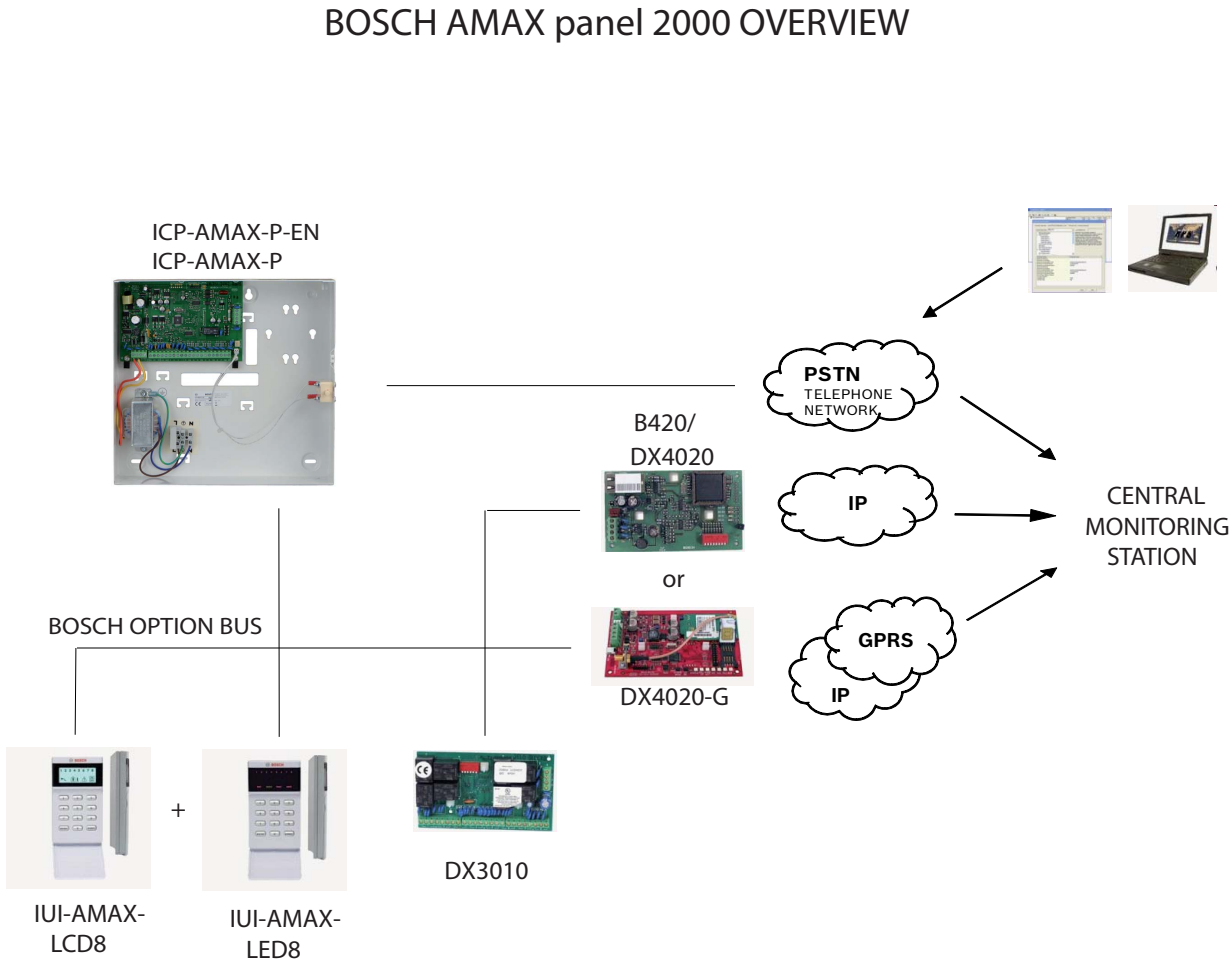

BOSCH AMAX panel 2000 OVERVIEW
ICP-AMAX-P-EN
ICP-AMAX-P
PSTN
TELEPHONE
NETWORK
B420/
DX4020
IP
CENTRAL
MONITORING
STATION
or
GPRS
IP
DX4020-G
BOSCH OPTION BUS
+
DX3010
IUI-AMAX-
LCD8
IUI-AMAX-
LED8

Table of Contents

1	**Short Information**	**10**
2	**System Overview**	**11**
2.1	AMAX Panel 2000 / AMAX Panel 2000 EN Features	11
3	**Installation**	**12**
3.1	Quick start	12
3.1.1	Setting date and time	13
3.1.2	AMAX Panel 2000 / AMAX Panel 2000 EN Zone Defaults	14
3.2	System Special Status Definition	14
3.3	Programming	14
3.3.1	Programming with the AMAX Keypad 2000	14
3.3.2	Programming with the ICP-EZPK Programming key	16
3.3.3	Installer’s Programming Command	16
3.3.4	Default the control panel with the hardware	16
3.4	Prerequisites for an EN-conform Setup of the System	17
4	**User Guide**	**19**
4.1	Arming the System	22
4.1.1	Arming in AWAY mode	22
4.1.2	Arming in STAY mode	23
4.1.3	Forced arming	23
4.2	Disarming the System	23
4.2.1	Disarming with CODE	23
4.2.2	Disarming with wireless control Key	23
4.2.3	Disarming with Key switch	23
4.3	Faults or Tamper conditions	23
4.3.1	System fault or tamper analysis Mode	24
4.4	Walk test mode	25
4.5	Event Memory Recall mode	25
4.6	Reset the Control Panel	25
4.7	Bypassing	26
4.7.1	Bypassing Zones	26
4.7.2	Bypassing Faults and Tamper conditions (Except Zone Tampers)	26
4.8	Enable / Disable the installers code	26
4.9	Change individual code	26
4.10	Keypad alarm operation commands	27
4.10.1	Duress alarm	27
4.10.2	Keypad panic alarm	27
4.10.3	Keypad fire alarm	27
4.10.4	Keypad medical alarm	27
4.11	Domestic Dialing	27
4.11.1	Domestic Dialing Alarm	27
4.11.2	Confirming the Domestic call	27

5	**Fault and Tamper Description**	**28**
5.1	Accessory Modules Fail	29
5.1.1	Keypad 1 fail	29
5.1.2	Keypad 2 fail	29
5.1.3	DX3010 Fail	30
5.1.4	B420/DX4020/ITS-DX4020G Fail	30
5.2	Power Faults	30
5.2.1	AC Failure	30
5.2.2	Battery Failure	31
5.2.3	AUX Power Supply Fail	31
5.2.4	Bosch Option Bus Power Supply Fail	31
5.2.5	RF Power Supply Fail	31
5.3	Warning Device Failure	32
5.3.1	Warning Device 1 Disconnected	32
5.3.2	Warning Device 1 Short	32
5.3.3	Warning Device 2 Disconnected	32
5.3.4	Warning Device 2 Short	33
5.4	Telephone Line Fault	33
5.5	Date and Time Fail	33
5.6	Communication Failure	34
5.6.1	Communication Failure 1	34
5.6.2	Communication Failure 2	34
5.6.3	Communication Failure 3	34
5.6.4	Communication Failure 4	34
5.7	Tamper Condition	35
5.7.1	On Board Tamper	35
5.7.2	Keypad 1 Tamper	35
5.7.3	Keypad 2 Tamper	35
5.7.4	Keypad lock out	35
5.7.5	Sensor Tamper	36
5.7.6	Zone Tamper	36
5.8	External Fault	36
6	**System Functions**	**38**
6.1	Duress alarm	38
6.2	Siren Test	39
6.3	Fault and Tamper Analysis Mode	39
6.4	View date and time	39
6.5	Walk Test Mode	39
6.6	Event Memory Recall Mode	40
6.7	Reset panel/clear siren	40
6.8	Initiate a Modem Call	41
6.9	Send Test Report	41
6.10	Bypass Zones	41
6.11	Show Zone Type	41
6.12	Bypass all Faults and Tamper conditions (Except zone Tamper)	42
6.13	Enable Disable installer code user’s access	42
6.14	Change individual code	42
6.15	Setting date and time	42

6.16	Add/delete User Codes	43
6.17	Add/delete Radio User Codes	43
6.18	Change Domestic Phone Number	44
6.19	Enter Programming Mode	44
6.20	Command 959 – Exit from installer's programming mode without saving the programmed data	44
6.21	Command 960 – Exit from installer's programming mode with saving the programming data	45
6.22	Command 961 – Reset the control panel to factory default settings	45
6.23	Command 962 – Copy the control panel memory to the programming key	45
6.24	Command 963 – Copy the programming key to the control panel	46
6.25	Command 999 – Display the software version number	46
6.26	Default the control panel with the hardware	46
7	**System Informations 1**	**48**
7.1	Zone Processing when arming	48
7.2	Zone Processing when disarming	48
7.3	Alarm processing	48
7.4	Software	49
7.4.1	Remote Connect	49
7.4.2	Remote Connect with Customer Control	49
7.4.3	Remote Connect with Callback Verification	49
7.4.4	Remotely Arm/Disarm System by Programming Softwares	50
7.5	Domestic Dialing	50
7.5.1	Domestic Dialing Function	50
7.6	Reporting Formats	50
7.6.1	Transmission Formats	50
7.6.2	Contact ID Format	50
7.6.3	CFSK Format	51
7.7	Dialer Information	51
7.7.1	Telephone number for Receiver 1 - 4/IP Address and Port	52
7.7.2	Other Network Programming Option	52
7.7.3	Report Transmission Sequence	53
7.7.4	Receiver 1 - 4 Transmission Format	53
7.7.5	Receiver 1 - 4 Subscriber ID Number	54
7.7.6	Call back Telephone Number	54
7.7.7	Ring Count	54
7.8	Access Codes	54
7.8.1	Installer Code	54
7.8.2	AMAX Panel 2000 / AMAX Panel 2000 EN User Codes	54
7.8.3	User Codes	55
8	**System Informations 2**	**56**
8.1	General overview on zones	56
8.1.1	Zone Inputs	56
8.1.2	Zone programming	57
8.1.3	Zone Types	57
8.1.4	Zone Bypass	61
8.1.5	Forced Arming	61
8.1.6	Silent Alarm	62
8.1.7	Zone Lockout	62

8.1.8	Zone Tamper	62
8.1.9	Zone Fault	62
8.1.10	Zone Report	63
8.1.11	Zone Chime Mode	63
8.2	System Reporting Information	63
8.2.1	System Option Programming Definition	63
8.2.2	System Report and Memory Definition	64
8.2.3	Auto Test Report	67
8.3	System Event Memory Recall	67
8.3.1	Keypad Play Back System Events	67
8.4	Output Process	68
8.4.1	Output Events Option	68
8.4.2	Output Type	70
8.4.3	Output Duration	70
8.4.4	Keypad Buzzer Alarm Output	71
8.4.5	Optional Relay Output	71
8.4.6	On-board LED Indicator	71
8.4.7	DX3010 Support	71
8.5	System Event Time	71
8.5.1	Entry Time	71
8.5.2	Exit Time	71
8.5.3	Keypad Lockout Time	71
8.5.4	System Power Up Wait Time	71
8.5.5	AC MAINS Fail Wait Time	71
8.6	Optional Equipment	71
8.6.1	RE012 E 2-Channel Hand-Held Keyfob 433 MHz	72
8.6.2	WE800E 433 MHz RF Receiver	72
8.6.3	ICP-EZPK Programming Key	72
8.6.4	A-Link Plus Software	72
8.6.5	DX3010 8 Relay Module	72
8.6.6	B420/DX4020/ITS-DX4020G GSM GPRS Communication Module	72
8.6.7	IUI-AMAX-LED8 8 Zone LED Keypad	73
8.6.8	IUI- AMAX- LCD8 8 Zone LCD Keypad	73
9	**Technical Data**	**74**
9.1	Specification	74
9.2	Interface Description	76
9.2.1	Terminals Internal Description	76
9.2.2	Connector Interface Description	76
10	**Programming sheets**	**77**
10.1	Receiver Programming	77
10.1.1	Receiver Parameters	77
10.1.2	Domestic Programming	78
10.2	System Report Options Programming	78
10.2.1	Report Options	78
10.2.2	Test Report Time Interval Setting	79
10.3	System Functions Programming	79
10.3.1	Ring Count	79

10.3.2	Remote Programming/Control	79
10.3.3	Call back Telephone Number	79
10.3.4	Exit Time	79
10.3.5	Entry Time	79
10.3.6	Keypad Lockout	79
10.3.7	Single Button STAY/AWAY ARM	80
10.3.8	Remote Arm by Software/Telephone	80
10.3.9	Arm by Keyfob	80
10.3.10	Force Arm as system is in trouble	80
10.3.11	Quick Emergency Alarm	80
10.3.12	Event Recall	80
10.3.13	OC1/Warning Device 1 Monitor	80
10.3.14	OC2/Warning Device 2 Monitor	80
10.3.15	Phone line Monitor	80
10.3.16	AC Fault Detect time	80
10.3.17	Battery Detect time	81
10.3.18	Event Record Count Per Set/Unset Period	81
10.3.19	Beep for Warning Devices	81
10.4	Zone Programming	81
10.5	Output Programming	84
10.5.1	Keypad Buzzer	84
10.5.2	Warning Device 1/ OC1 Output	84
10.5.3	Warning Device 2 / OC2 Output	84
10.5.4	Optional Relay Output / OC3	84
10.5.5	DX3010 Output	84
10.6	Installer/User Code Programming	86
10.6.1	Installer code # 0	86
10.6.2	User Codes	86
11	**Troubleshooting**	**87**
	Glossary	**89**

1 Short Information

Congratulations on selecting the AMAX Panel 2000/AMAX Panel 2000 EN for your installation. Spend some time reading through this guide and familiarize yourself with the outstanding operation and installation features of this system so that you can get the most from your unit. In all aspects of planning, engineering, styling, operation, convenience and adaptability, we try to anticipate your every possible requirement. Programming simplicity and speed are our major considerations; we believe that our objectives have been attained.

This installation guide explains all aspects of programming the AMAX Panel 2000/AMAX Panel 2000 EN from factory default to final commissioning. All system parameters and options are dealt with in detail, but adaptability differs with individuals. Each control panel can be tailored to meet your requirements quickly and easily. The programming simplicity makes your installation quick, accurate and rewarding.

As AMAX Panel 2000/AMAX Panel 2000 EN continue to improve over the years, they become more powerful. We have addressed the needs of first-time users by maintaining simplicity in the product and its installation guide, which enabled them in turn to evolve as "power users".

2 System Overview

2.1 AMAX Panel 2000 / AMAX Panel 2000 EN Features

AMAX Panel 2000/AMAX Panel 2000 EN uses the latest in microprocessor technology to provide you with useful features, and superior reliability and performance.
The control panel provides these features:

- Eight programmable User Codes (1 - 8)
- Eight programmable radio remote User Codes (9 - 16)
- Eight programmable Burglary Zones
- LED and LCD keypads
- Support for up to four control stations
- Separate programmable alarm and system information routing
- Domestic dialing
- Control station call back
- CID and CFSK formats
- B420 IP, BOSCH DX4020 IP and DX4020G GPRS modules
- Telephone line monitor function
- Keypad duress, panic, fire, and medical alarms
- **STAY** Mode and **AWAY** Mode operation
- RPS remote program upload/download
- RPS remote control
- Telephone remote arming
- RE012E keyfob arming/disarming
- Quick programming key
- Dynamic battery testing
- Entry/Exit warning beeper
- AC Fail and system fault indicators
- Fault inquiry and analysis
- 2 Programmable monitored siren output’s
- Programmable on-board output
- Relay output option
- BOSCH DX3010 Octo relay module
- Supports four wire smoke detector
- Zone lockout
- Zone testing and tamper
- Zone bypass
- Silent alarm
- Walk test mode
- Programmable test reports
- 254 event histories stored in non-volatile memory stamped with date and time
- 254 EN-event histories stored in separate non-volatile memory stamped with date and time

3 Installation

3.1 Quick start

The following steps allow you to use the AMAX Panel 2000/AMAX Panel 2000 EN with factory default values. To become familiar with programming AMAX Panel 2000/AMAX Panel 2000 EN, read the information in *Section 3.3 Programming, page 14*.

1. Connect auxiliary equipment
2. After all wiring is complete, connect the AC plug pack and backup battery to the control panel. The **MAINS** indicator lights signify AC mains supply is connected.
   If any zone is unsealed when you power up the system, the corresponding zone indicator is lit constantly.

   Once you power up the panel, Date and Time has to be set.

   All Faults and Tamper conditions have to be reset.
3. Enter the default user code (2580) + (98) and press [#] to enable the installer's access.
4. Enter Date and Time. Refer to section 3.1.1 Setting Date and Time on page 10.
5. Enter the default Installer Code (1234) + (958) and press [#]. Two beeps sound and the **STAY** and **AWAY** indicators flash simultaneously to indicate that you have entered into installer's programming mode. Once you enter the installer's programming mode, you are automatically positioned at location 000, the first digit of IP address / Primary telephone number for Receiver 1.
6. Enter the IP address/Primary telephone number for Receiver 1 and then the port. Programming a 15 in the telephone number indicates the end of the dialing sequence.
7. Program any other required changes. Otherwise, factory default settings are used.
8. Enter command [9 6 0] and press [#] to store the programming data and exit from installer's programming mode, a beep sounds and the **STAY** and **AWAY** indicators are deactivated. The system is returned to the disarmed state and is ready for use. Refer to *Section 3.3.3 Installer's Programming Command, page 16*
9. Enter the default user code (2580) and (6) and press [#] to reset the panel.

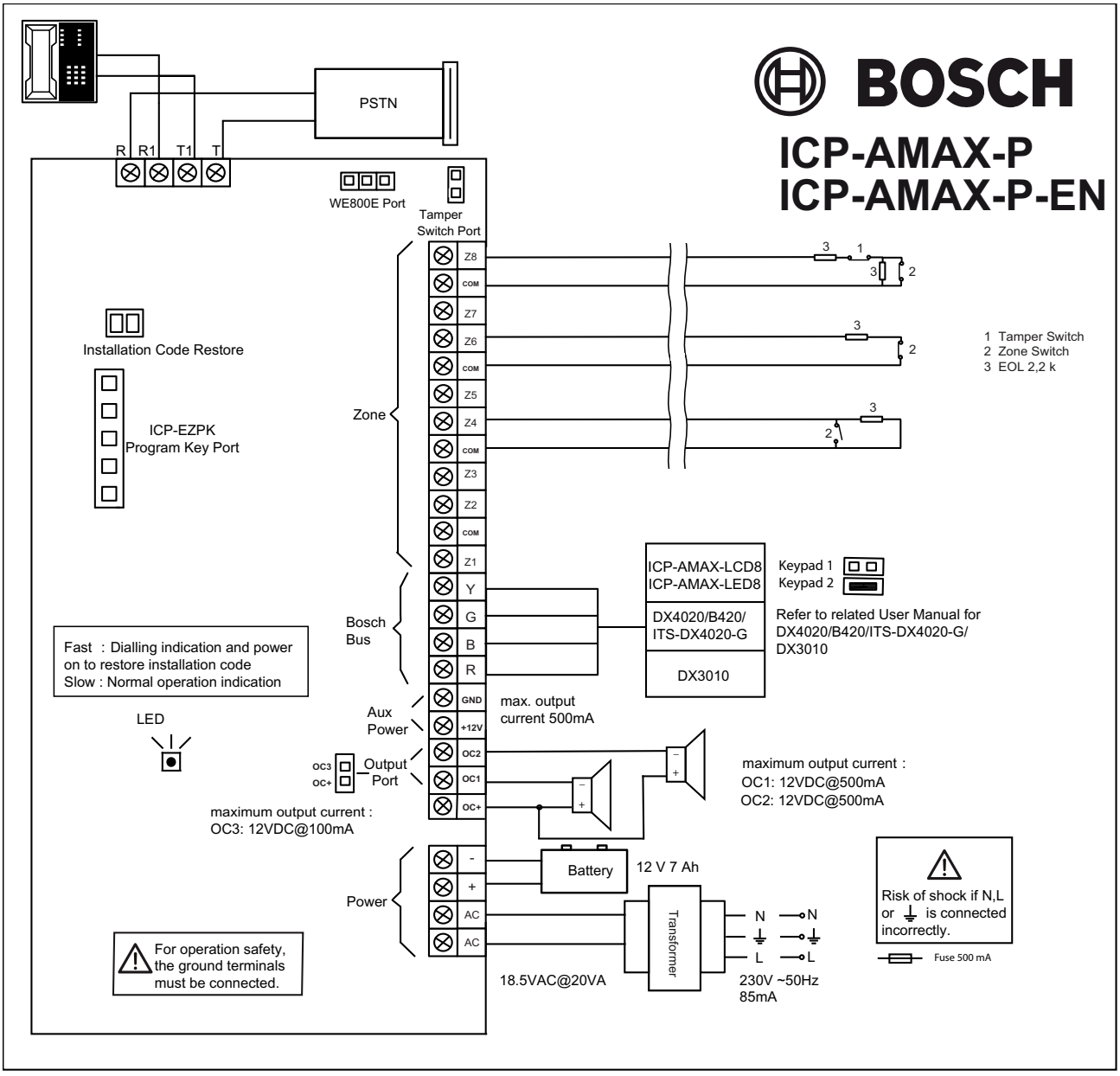


Figure 3.1 Wiring Diagram

3.1.1 Setting date and time

Set the date and time after powering up the system, otherwise **Date and Time** Default to factory settings.

1. Enter the installer code +955 and press [#]. Two beeps sound, the **STAY** and **AWAY** indicators flash and date + time is shown in the format YYMMDD HHMM.
2. Enter the year, month, day, hour and minute in YY, MM, DD, HH, MM format and press [#]. Use 24:00 hour format when programming the hour of the day. A beep sounds and the **STAY** and **AWAY** indicators are deactivated. If a long beep sounds, it indicates an erroneous entry of date and time.
3. If operation is not carried out within 240 seconds after entering the date and time setting interface, the system will automatically exit from the setting.

Example
To set the date and time for the 25th of December 2010 at 10:30PM, enter:
[Installer CODE + 955][#] break until time is shown [1 0 1 2 2 5 2 2 3 0][#]

3.1.2 AMAX Panel 2000 / AMAX Panel 2000 EN Zone Defaults

The default zone settings for the control panel are listed in *Table 3.1, Page 14*. You can program zones 1 to 8 to any of the zone types. Refer to *Table 10.4, Page 81* for the zone type you can select.

Zone	Zone type	Zone	Zone type
1	Delay	5	Instant
2	Follower	6	Instant
3	Instant	7	Instant
4	Instant	8	Instant

Table 3.1 Zone defaults

3.2 System Special Status Definition

– When the AC power voltage is lower than 9V±5%, the system will not detect/send out the zone status report to CMS.
– When the AC power voltage is more than 9V±5%, the system will wait for 1 minute to back up the normal work while in a stable work status.

3.3 Programming

The control panel programming options are stored in a non-volatile flash memory. This memory has all relevant configurations and user-specific data even after a total power loss. Because the data retention time is quite long without power, reprogramming is not required after powering up the control panel.
You can change data as many times as required without any additional specialized equipment. The memory is organized in locations, each of which holds the data for a specific function.

NOTICE!
0 is the minimum value and 15 is the maximum value that can be programmed into any location.

In general, the entire programming sequence consists of selecting the required location and entering or changing the current data. Repeat this procedure until you program all the required data.
The installer code turns active only when it’s enabled by a user. You cannot enter installer’s programming mode if the system is armed, or during siren run time.
You can program the AMAX Panel 2000 / AMAX Panel 2000 EN using any of these three devices:
– Keypads
– A - Link - Plus Upload/download software
– CP-EZPK Programming key

3.3.1 Programming with the AMAX Keypad 2000

To program the control panel using the keypad, the system must be disarmed with no alarm memory present and installer access must be enabled.
To access installer’s programming mode:

Enter the four-digit installer code (the factory default is 1234) + (958) and press [#] .
Two beeps sound and both the **STAY** and the **AWAY** indicators flash simultaneously to indicate that you have entered into installer's programming mode.
Once you enter into installer's programming mode, you are automatially positioned at location 000, the first digit of the IP Address/ primary telephone number for receiver 1. The keypad indicators display the current data stored in this location.

Data	**Zone Indicators**								
Value	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**Mains**
0									
1	X								
2		X							
3			X						
4				X					
5					X				
6						X			
7							X		
8								X	
9	X							X	
10									X
11	X								X
12		X							X
13			X						X
14				X					X
15					X				X

Table 3.2 Keypad Indicators

To move to a different programming location:
Enter the location number and press [#] .
For example, press [1 7][#] to automatically position you at the beginning of the subscriber ID number 17 for receiver 1. The data stored in the new location appears.

To move to the next location:
Press [#] .
For example, if you are currently positioned at location 017, press [#] to move to location 018.

To move to the previous location:
Press [*] .
For example, if you are positioned at location 018, press [*] to move back to Location 017.

To change data in the current location:
Enter the new value (0 - 15) and press [*] .
The data is stored and you remain positioned at the same location. The keypad indicators display the new value (for example, if you enter [1 4] and press [*] , the zone 4 and **MAINS** indicators are lit).

To exit from installer's programming mode + save data:
Enter command [9 6 0] and press [#].
Two beeps sound and the **STAY** and **AWAY** indicators are deactivated. The system returns to the disarmed state and is now ready for use.

Refer to *Section 3.3.3 Installer's Programming Command, page 16* for more information about using installer's programming mode.

NOTICE!
Enter command [9 5 9] [#] to exit if the setting does not need to be saved.

3.3.2 Programming with the ICP-EZPK Programming key

The ICP-EZPK Programming key allows you to save or copy programming information from your control panel. After saving information in the programming key, you can easily program other AMAX Panel 2000 / AMAX Panel 2000 EN with the same programming data. You can also use the programming key to back up existing information.
If you have a new programming key, enter installer's programming mode, program the system as required, and connect the programming key to the control panel.
To connect the programming key:
Locate the socket labeled PROGRAMMING KEY at the top of the printed circuit board (PCB) . Observe the triangular markings on the PCB and align them with the markings on the programming key.

For example: to copy data from the control panel to the programming key:

1. Enter the installer code (the default is 1234) + (958) and press [#] to enter into installer's programming mode.
2. Enter [9 6 2 #].
   Refer to *Section 6.23 Command 962 – Copy the control panel memory to the programming key, page 45*.
3. Enter [9 6 0 #] to exit from installer's programming mode.
4. The system resets and returns to the disarmed state. And the programming key becomes your standard data pattern for future control panel programming.

CAUTION!
If you do not enter installer's programming mode first, which connects the blank ICP-EZPK Programming key to the control panel, no data can be uploaded /downloaded.
An unknown error may be caused if the installer's programming mode is not exited before removing the programming key.

3.3.3 Installer's Programming Command

There are six commands that you can use in installer's programming mode. To issue the command, enter the command number and press [#].(CMD 959-999). Refer to *Section 6 System Functions, page 38*

3.3.4 Default the control panel with the hardware

If the installer code is lost, the default pads on PCB can be used to default the control panel.

1. Disconnect the AC MAINS supply and the backup battery from the control panel.
2. Short the default pads. The default pads is located on the right top of the PCB next to the PROGRAMMING KEY socket.
3. Reconnect the power supply to the control panel.
4. If the LED on the control panel PCS flashes fast, release the default pads about 5 seconds later.
5. The control panel is successfully defaulted to the default Installer und User Code, other parameters are not defaulted.

6. If the LED on the control panel PCB does not fast flash, the factory default was unsuccessful.

3.4 Prerequisites for an EN-conform Setup of the System

- System must be mounted inside the monitored area on a stable surface
- Keypads must be mounted to the inner side of the monitored area
- Once the system is tested and ready to use, Enclosure Door and Keypads must be secured with screws
- Two external Warning Devices must be connected to the System
- The Dialer must be connected to a Central Monitoring Station
- A 12V/7AH Battery must be connected to the System
- The Maximum Current of all Components together (PCB=lOOmA, lCP-KP8L=18mA, ICPKP8 =24mA) should not exceed 550mA
- The lock can only be used in an non EN setup.
- The panel must be programmed with the EN settings indicated on the programming sheet. When the panel is set without EN parameters, the EN Indication (Label) must be removed.

Instructions to modify the IUI-AMAX-LED8 and the IUI-AMAX-LCD8 Keypad to meet the EN requirements

1. Open the Keypad
2. Remove the PCB (open the two screws on the PCB).
3. Remove the rubber

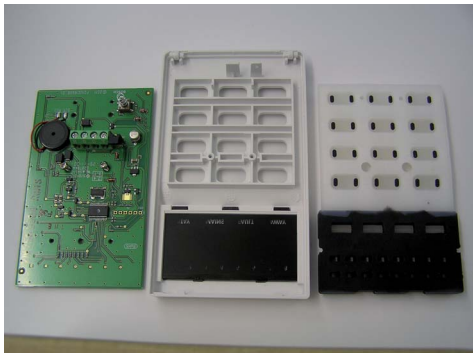


Figure 3.2

4. Apply one drop of Instant Adhesive Loctite 401 on each side of the window.
(See *Figure 3.3* and *Figure 3.4*)

The Adhesive must be applied to the Window and to the Enclosure

Figure 3.3

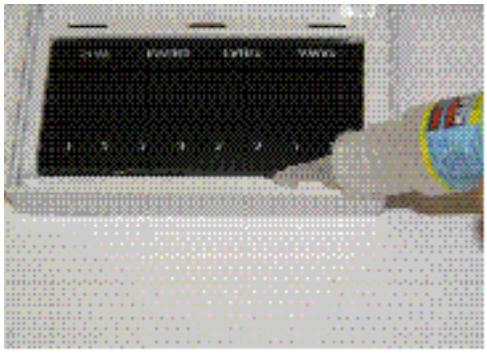


Figure 3.4

5. Reassemble the Keypad (it’s now ready for use in you’re EN setup)

4 User Guide

ICP-AMAX - LED8-8 Zone LED Keypad	ICP-AMAX-LCD8 - 8 Zone LCD Keypad

Quick keypad operation instructions

Arming	
AWAY arm	[code] + [#] / [#] (quick arming)
STAY arm	[code] + [*] / [*] (quick arming)
Disarming	
Disarm	[code] + [#]
Other Commands	
Fault and Tamper Analysis	[code] + [2] [#]
Walk test	[code] + [4] [#]
Event recall	[code] + [5] [#]
System Reset	[code] + [6] [#]
Bypassing zones	[code] + [9] [#] [zone] + [*] [#]
Bypassing Faults and Tamper conditions	[code] + [97] [#]
Enable/Disable Installer code	Enable = [code] + [98] [#] Disable = [code] + [98] [*]
Change individual code	[code] + [99] [#] [newcode] [#]
Alarm Commands	
Duress alarm	[code] + [0] [#]
Emergency alarm	Simultaneously press and hold [1] and [3] or [*] and [#]
Fire alarm	Simultaneously press and hold [4] and [6]
Medical alarm	Simultaneously press and hold [7] and [9]
Default user code = 2580	

Table 4.1 Quick keypad operation instructions

Keypad Indicators

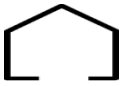
LCD keypad indicator icons	LED keypad indicator lights	Status	Definition
1 2 3	**Zone (1-8)**	on	Zone is triggered.
		off	Zone is normal.
		Fast flash (0.25 seconds lights on/ 0.25 seconds lights off)	Zone was alarmed or is in alarm status.
		Slow flash (1 second lights on/1 second lights off)	Zone is manually bypassed or interior Zone is in STAY ARM mode.
	AWAY	on	System is armed in **AWAY** mode.
		off	System not armed in **AWAY** mode.
		Slow flash (1 second lights on/1 second lights off)	Exit time.
		Fast flash (0.25 seconds lights on/ 0.25 seconds lights off)	Programming mode or Code function mode. **STAY** indicator flashes simultaneously.
	STAY	on	System is armed in **STAY** mode.
		off	System not armed in **STAY** mode.
		Slow flash (1 second lights on/1 second lights off)	Exit time.
		Fast flash (0.25 seconds lights on/ 0.25 seconds lights off)	Programming mode or Code function mode. **AWAY** indicator flashes simultaneously. When bypass function is performed, the **STAY** indicator only flashes.
	MAINS	on	AC main power is normal.
		Slow flash (1 second lights on/1 second lights off)	AC main power supply failed.
	FAULTS	on	System fault or Tamper condition is present.
		off	System is in normal status.
		Flashes	System fault or Tamper condition must be acknowledged.
		on	System is disarmed.

Table 4.2 Keypad Indicators

Keypad sounds

Sound indicator	Definition
One short beep	A keypad button has been pressed.
One single one-second beep	The requested operation is refused. Incorrect operation signal.
Two short beeps	The system accepted the code. The system executed the requested function.
One short beep per second	In walk test mode.
One short beep every two seconds	Exit time started.
Continued sound	– Last 10s on exit time – Keypad fault/tamper sound (fault/tamper to be acknowledged) – Keypad alarm sound
Continuous 0.5 second beep, stops 0.5 seconds	Entry delay time (until alarm ends or system is disarmed).

Table 4.3 Keypad sounds

Zone description

Zone 1 _____
Zone 2 _____
Zone 3 _____
Zone 4 _____
Zone 5 _____
Zone 6 _____
Zone 7 _____
Zone 8 _____
Exit Time _____ sec
Entry Time _____ sec

User Code Names

Code 1 _____
Code 2 _____
Code 3 _____
Code 4 _____
Code 5 _____
Code 6 _____
Code 7 _____
Code 8 _____
Code 9 _____ Keyfob 1
Code 10 _____ Keyfob 2
Code 11 _____ Keyfob 3
Code 12 _____ Keyfob 4
Code 13 _____ Keyfob 5

Code 14 _____ Keyfob 6
Code 15 _____ Keyfob 7
Code 16 _____ Keyfob 8

4.1 Arming the System

NOTICE!
When the number of incorrect code entries on the keypad reaches a specified number, the keypad will automatically lock for 180 seconds and alarm is reported.If the keypad is idle for 4 minutes, the system will automatically exit from any operational mode.

4.1.1 Arming in AWAY mode

Arming the system in AWAY Mode is normally performed when you leave the premises and require that all zones are activated in a ready state to detect an intrusion.

4.1.1.1 Keypad arming

The system can be set to AWAY mode in two different ways.

To arm the System in AWAY mode (method 1)

Enter your code and press [#].
Two beeps sound, the AWAY indicator flashes slow, and exit time starts. After exit time, the AWAY indicator turns is lit.

To arm the System in AWAY mode (method 2)

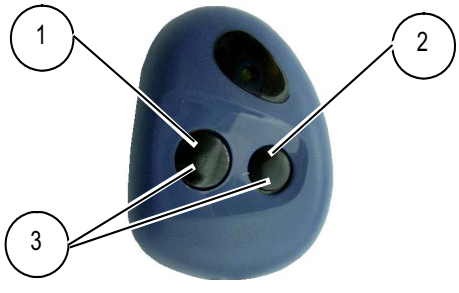
Press and hold [#] until it beeps twice.
The AWAY indicator flashes slow, and exit time starts. After exit time, the AWAY indicator is lit.
Please contact your installer to enable/disable this function.

4.1.1.2 Telephone remote arming

The user dials the control panel number. The control panel answers the call and issues a long beep. After the long beep, the user must press the [#] key. When the Panel receives the signal it will confirm the arming of the control panel with a high tone.
Please contact your installer to enable/disable this function.

4.1.1.3 Arming in AWAY mode with wireless remote control Key

Press and hold the Arming Button until two beeps sound on the remote keypad and the AWAY indicator flashes slow. Exit time starts. After exit time, the AWAY indicator is lit.

RE012E:2 standard wireless remote control key

1 –Button 1: Arm in AWAY mode 2 –Button 2: Disarm 3 –Button 1 and 2: Press both buttons at the same time to activate Panic alarm

4.1.1.4 Key switch arming

Users can use a key switch to Arm and Disarm the system. When the Key switch is activated, the AWAY indicator flashes slow and exit time starts. After exit time, the AWAY indicator is lit. When the Key switch is deactivated, the system is disarmed and Away indicator is off.

4.1.2 Arming in STAY mode

STAY Mode is used when you need to arm the perimeter and unused areas of the premises to detect a would-be intruder, while at the same time being able to move freely within an area that is automatically isolated

There are two methods to arm your system in STAY Mode

To arm the system in STAY mode (method 1)

Enter your code and press [#].

Two beeps sound, the STAY indicator flashes slow and exit time starts. After exit time, the STAY indicator is lit.

The lights corresponding to all zones programmed as automatically isolated zones (Interior Instant Zone) begin to flash and continue until the exit time is finished.

To arm the system in STAY mode (method 2)

Press and hold [#] for 3 seconds.

When two beeps sound, release the button.

The STAY indicator flashes slow and exit time starts. After exit time, the STAY indicator is on.

Please contact your installer to enable/disable this function.

4.1.3 Forced arming

Arming the system when a zone is not sealed is known as forced arming. If the AWAY indicator does not glow, and if a long beep sounds when you attempt to arm the system in AWAY Mode, then forced arming is not permitted. If this is the case, then you will have to seal all zones or manually isolate them before you can arm the system.

Please contact your installer to enable/disable this function.

4.2 Disarming the System

4.2.1 Disarming with CODE

Enter your code and press [#] .Two beeps sound and the AWAY or STAY indicator is extinguished.

4.2.2 Disarming with wireless control Key

Press and hold the Disarming Button. Two beeps sound and the AWAY or STAY indicator is extinguished.

4.2.3 Disarming with Key switch

When the Key switch is deactivated, the system is disarmed and the AWAY or STAY indicator is extinguished.

4.3 Faults or Tamper conditions

Whenever a system fault or tamper condition occurs, the FAULT or MAINS indicator flashes and the keypad beeps.

NOTICE!
Operation can be carried out only in disarmed status.

4.3.1 System fault or tamper analysis Mode

To enter fault or tamper analysis mode for determining a system fault or tamper condition:

1. Enter your Code and [2] and press [#]. Two beeps sound.The FAULT indicator remains lit and the STAY and AWAY indicators flash. The lit zone indicators indicate the type of fault or tamper condition that occurred.
2. For a multi-level menu, enter the corresponding number to enter the submenu, press [0] key to return to the main menu.
3. To exit from Fault and Tamper Analysis Mode, press [#] . The STAY and AWAY indicators are extinguished and the FAULT indicator remains lit, and the keypad stops the beep.

1	**Accessory Modules Fail**	
	1	Keypad 1 fail
	2	Keypad 2 fail
	3	DX 3010 Fail
	4	B420/DX 4020 /-G Fail
2	**Power Faults**	
	1	AC Fault
	2	Fault Battery
	3	Aux Power Supply Fault
	4	Bosch Option Bus Power Fault
	5	RF Power Fault
3	**Warning Device Failure List**	
	1	Warning Device 1 Disconnected
	2	Warning Device 1 Short
	3	Warning Device 2 Disconnected
	4	Warning Device 2 Short
4	**Telephone Line Fail**	
5	**Date and Time Fail**	
6	**Communications failure**	
	1	Communication Failure 1
	2	Communication Failure 2
	3	Communication Failure 3
	4	Communication Failure 4
7	**Tamper**	
	1	On board Tamper
	2	Keypad 1 Tamper
	3	Keypad 2 Tamper
	4	Keypad Lock out
	5	Sensor Tamper (Zone 1-8)
	6	Tamper Zone (Zone 1-8)
8	**External Fault**	

4.4 Walk test mode

This function allows code holders to test detection devices to ensure they are functioning correctly. Before activating Walk test Mode, bypass any zones that are not required for testing.
During the walk test, no walk test report is sent out to the control panel system.

To enter into Walk test Mode:

1. Enter your Code + [4] and press [#].
   Two beeps sound and the STAY and AWAY indicators flash. The keypad beeps once per second when walk test mode is active.
2. Unseal and seal the zones to be tested.
   The keypad sounds one second beep and the siren sounds one beep each time when a Zone status is changed.

4.5 Event Memory Recall mode

This function allows you to playback the last 254 system events that occurred.
Event Memory recall mode reports all alarms and each arming or disarming of the system and helps in troubleshooting system faults.
The events are shown using the keypad indicators. Defined events are shown using keypad indicators.
To enter Event memory Recall mode:
Enter your code + [5] and press #. Two beeps sound. The events are played back by the keypad indicators in reverse chronological orer.

Example:
If the events occurred in the following order:

Sequence	Event
1	System armed in AWAY mode
2	Alarm in Zone 3
3	Alarm in Zone 4
4	System disarmed

The alarm memory is played back in this order:

Sequence	Indication	Event
1	All indicators off	System disarmed
2	Zone 4 and AWAY indicators light	Alarm in Zone 4
3	Zone 3 and AWAY indicators light	Alarm in Zone 3
4	AWAY indicator lights	System armed in AWAY mode

Each event is indicated by a beep and a lit indicator.
Resetting a disarmed 24-Hour alarm is indicated by a beep only.
After the last event, two beeps sound to indicate the end of the playback.
You can stop the replay at anytime by pressing [#].
If the system is armed in STAY mode, the STAY indicator shows the event memory playback.
If the control panel is powered down the memory of all events is saved.

4.6 Reset the Control Panel

This function allows code holders to reset all Alarm Faults and Tamper conditions.

Enter your code and then press [6] [#].
The keypad beeps twice and the signal is eliminated.

NOTICE!
You can reset alarms, faults or tamper conditions, only when they are not active anymore.

4.7 Bypassing

4.7.1 Bypassing Zones

By bypassing Zones, one or more zones are disabled for one arming cycle. After bypassing a zone, you can arm the system even when a zone is in alarm state.

How to bypass a zone

1. Enter your code and press [9] [#]. The STAY indicator flashes fast.
2. Enter the zone number you wish to bypass, then press the [*] key.
   (If you wish to bypass multiple zones, please repeat step 2).
3. If you wish to cancel bypassed zone, enter the zone number of the bypassed zone , then press the [*] key.
   (If you wish to cancel several bypassed zones, please repeat step 3.)
4. Press [#] to exit.

NOTICE!
If the selected zone is already bypassed, when operating this zone, the bypass from this zone will be cancelled.

4.7.2 Bypassing Faults and Tamper conditions (Except Zone Tampers)

Bypassing Faults and Tamper conditions, one or more faults and tamper conditions are disabled for one arming cycle. After bypassing a Fault or Tamper condition, you can arm the system even when a Fault or Tamper condition exists.

How to bypass faults and tamper conditions

1. Enter your user code + [97] and press [#].
   Two beeps sound.

4.8 Enable / Disable the installers code

This function allows user code holder to enable or disable the installer code.
Installer can only perform actions when he is enabled by a user.

1. Enter your user code + [98] and press [#] to enable the function.
   Two beeps sound.
2. Enter your user code + [98] and press [*] to disable the function.
   Two beeps sound.

4.9 Change individual code

This function allows user to change their individual code.

How to change the code

1. Enter your code and press [99] [#].
   Two beeps sound and the STAY and AWAY indicators flash, and your user number is shown on the keypad.

2. Enter the new code and press [#].
   Two beeps sound and the STAY and AWAY indicators are extinguished.

NOTICE!
Thia function is automatically terminated if you do not press a button within 240 seconds or if you press [#]. One long beep indicates that the code already exists or that you entered an incorrect user number.

4.10 Keypad alarm operation commands

4.10.1 Duress alarm

A keypad duress alarm is used as a silent holdup alarm when 0 is added to the end of a valid Code used to disarm the system ([code] + [0] + [#]).
A duress alarm is useful only if your system reports to a monitoring station. Domestic reporting cannot define the type of alarm that occurred.

4.10.2 Keypad panic alarm

If you simultaneously press and hold [1] and [3] or simultaneously press and hold [*] and [#], a silent emergency alarm will be transmitted. Please contact your installer to enable/disable the keypad emergency alarm functionality.

Simultaneous pressing and holding the wireless remote control key arming and disarming key can also transmit a wireless emergency alarm.

4.10.3 Keypad fire alarm

If you simultaneously press and hold [4] and [6], a silent keypad fire alarm will be transmitted. Please contact your installer to enable/disable the fire alarm functionality.

4.10.4 Keypad medical alarm

If you simultaneously press and hold [7] and [9], a silent keypad emergency medical alarm will be transmitted. Please contact your installer to enable/disable the emergency medical alarm functionality.

4.11 Domestic Dialing

4.11.1 Domestic Dialing Alarm

When the control panel is activated into zone tamper/zone alarm, it can dial the mobile phone or telephone number of a family member/friend. A maximum of one telephone number can be called through the control panel during an alarm.
Contact your installer to enable/disable the Domestic dialinf functionality.

4.11.2 Confirming the Domestic call

All alarm events need acknowledgement.
The transmission sequence is repeated until the control panel recieves an acknowledgement tome.
The control panel automatically hangs up after 45 seconds if it cannot detect the acknowledgement tone and redial later.
The user presses [#] between two acknowledgement tones to confirm the alarm.
If the control panel got the [#] acknowledgement from the user, it will send 2 second long beep as acknowledge tone and hang up the line.

5 Fault and Tamper Description

Whenever a system fault or a tamper condition occurs, the FAULT or MAINS indicator flashes and the keypad beeps.

To enter fault and tamper condition analysis mode to determine a system fault or tamper condition:

1. Enter your Code and [2] and press [#] two beeps sound.The FAULT indicator remains lit and the STAY and AWAY indicators flash. The lit zone indicators indicate the type of fault or tamper condition that occurred.
2. For multi-level menu, enter the corresponding number to enter the submenu, press [0] key to return to the main menu.
3. To exit from Fault and Tamper Analysis Mode, press [#] . The STAY and AWAY indicators are extinguished and the FAULT indicator remains lit, and the keypad stops the beep.

When a new fault or tamper occurs, the FAULT indicator flashes again and the keypad beeps. The FAULT indicator gets extinguished once all faults are restored.

Zone Indicator

1	**Accessory Modules Fail (Refer to *5.1*)**	
	1	Keypad 1 fail (Refer to *5.1.1*)
	2	Keypad 2 fail (Refer to *5.1.2*)
	3	DX 3010 Fail (Refer to *5.1.3*)
	4	B420/DX 4020 /-G Fail (Refer to *5.1.4*)
2	**Power Faults (Refer to *5.2*)**	
	1	AC Fault (Refer to *5.2.1*)
	2	Fault Battery (Refer to *5.2.2*)
	3	Aux Power Supply Fault (Refer to *5.2.3*)
	4	Bosch Option Bus Power Fault (Refer to *5.2.4*)
	5	RF Power Fault (Refer to *5.2.5*)
3	**Warning Device Failure List (Refer to *5.3*)**	
	1	Warning Device 1 Disconnected (Refer to *5.3.1*)
	2	Warning Device 1 Short (Refer to *5.3.2*)
	3	Warning Device 2 Disconnected (Refer to *5.3.3*)
	4	Warning Device 2 Short (Refer to *5.3.4*)
4	**Telephone Line Fail (Refer to *5.4*)**	
5	**Date and Time Fail (Refer to *5.5*)**	
6	**Communications failure (Refer to *5.6*)**	
	1	Communication Failure 1 (Refer to *5.6.1*)
	2	Communication Failure 2 (Refer to *5.6.2*)
	3	Communication Failure 3 (Refer to *5.6.3*)
	4	Communication Failure 4 (Refer to *5.6.4*)
7	**Tamper (Refer to *5.7*)**	
	1	On board Tamper (Refer to *5.7.1*)
	2	Keypad 1 Tamper (Refer to *5.7.2*)
	3	Keypad 2 Tamper (Refer to *5.7.3*)
	4	Keypad Lock out (Refer to *5.7.4*)
	5	Sensor Tamper (Refer to *5.7.5*) (Zone 1-8)

	6	Tamper Zone (Refer to *5.7.6*) (Zone 1-8)
8	**External Fault (Refer to *5.8*)**	

5.1 Accessory Modules Fail

The zone indicator 1 lights to indicate external module fail.Enter [1] to step to external modules fail list for more information.

5.1.1 Keypad 1 fail

Condition:

1. Keypad fail is reported at any time when communication fails between panel and address 1 keypad.

Restore:

Communication between panel and keypads comes back to normal and fault is reset.

Supervise:

1. Report the keypad fault to the configured destination programmed on location 140.
2. Flash FAULT indicator on the other keypad in normal operation (refer to the detailed description in chapter keypad indicators).
3. Keypad missing communication with the panel performance as below:
   -Stop detection on the keypad button
   -Flash FAULT indicator
   -The disconnected keypad do not sound FAULT beeping per minute
4. When the keypad fault is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.1.2 Keypad 2 fail

Condition:

1. Keypad fail is reported at any time communication fails between the panel and address 2 keypad.

NOTICE!

Keypad 2 fail is only reported when Keypad 2 was connected during powering up the system!

Restore:

Communication between panel and keypads comes back to normal and fault is reset.

Supervise:

1. Report the keypad fault to the configured destination programmed on location 140.
2. Slow flash the FAULT indicator on the other keypad in normal operation (refer to the detailed description in chapter keypad indicators).
3. Keypad missing communication with the panel performance as below:
   -Stop detection on the keypad button
   -Flash FAULT indicator
   -The disconnected keypad does not sound FAULT beeping per min
4. When the keypad fault is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.1.3 DX3010 Fail

The fault is registered when the DX3010 fails. The fault is reset when the DX3010 is restored.
Condition:
No communication with DX3010 if DX3010 is programmed.
Restore:
Communicaiton with DX3010 is normal and fault is reset.
Supervise:

1. Report the DX3010 fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.1.4 B420/DX4020/ITS-DX4020G Fail

The fault is registered when the B420/DX4020/ITS-DX4020G fails. The fault is reset when the B420/DX4020/ITS-DX4020G is restored.
Condition:
No communication with the DX4020/ITS-DX4020G if DX4020/ITS-DX4020G is programmed.
Restore:
Communication with DX4020/ITS-DX4020G is normal and fault is reset.
Supervise:

1. Report the DX4020/ITS-DX4020G fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.2 Power Faults

The zone indicator 2 lights to indicate Power Faults. Enter [2] to step to Power Faults list for more information.

5.2.1 AC Failure

Condition:

1. 18V AC supply deficiency to panel caused by tansformer .
2. 220V power supply fuze broken.
3. 220V power supply disconnected.

Restore:
AC MAINS supply is reconnected and fault is reset.

1. Monitor the voltage by MPU.
2. If the AC fault is not restored in 1 hour after the fault occured, report the fault to configured destination on location 140.
3. Slow flash the FAULT indicator
4. As the AC supply is reconnected, the MAINS indicator is back to light (except in Programming Mode or Code Functions Mode).
5. When the fault is restored, send the restored report to the configured destinations.

5.2.2 Battery Failure

Condition:

1. Battery voltage is lower than 11.8V+-1%.
2. No battery connected.

Restore:

When Battery voltage rises to 12.5V+-1%, Dynamic Battery test is performed (time set in Programming location 191) and fault is reset.

Supervise:

1. The system performs a Dynamic Battery Test every time (set in location 191) and every time the system is armed or reset.
2. Report the low battery to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators)
4. When the battery is restored, send the low battery restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.2.3 AUX Power Supply Fail

Condition:

Aux Power Supply Voltage is lower than 9V+-5%.

Restore:

Voltage is raised to 12.5V+-5% and fault is reset.

Supervise:

1. Monitor the voltage by MPU.
2. Report the AUX power fault to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the AUX power supply is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.2.4 Bosch Option Bus Power Supply Fail

Condition:

Bosch option bus power supply Voltage is lower than 9V+-5%.

Restore:

Voltage is raised to 12.5V+-5% and fault is reset.

Supervise:

1. Monitor the voltage by MPU.
2. Report the AUX power fault to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the AUX power supply is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.2.5 RF Power Supply Fail

RF power supply fail is registered when the RF Power output fails. After the RF power output is restored, the control panel sends a trouble restore report.

Condition:

Voltage is lower than 4V+-5%.

Restore:
Voltage is raised to 5.5V+-5% and fault is reset.
Supervise:
1. Monitor the voltage by MPU.
2. Report the RF power fault to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the RF power supply is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.3 Warning Device Failure

The zone indicator 3 lights to indicate Warning Device Failure. Enter [3] to step to external modules fail list for more information.

5.3.1 Warning Device 1 Disconnected

Condition:
Warning Device is disconnected.
Restore:
Warning Device is connected and fault is reset.
Supervise:
1. Monitor the voltage by MPU.
2. Report the siren fault to the configured destination programmed on location 140
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the siren is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.3.2 Warning Device 1 Short

Condition:
Warning Device output is shorted.
Restore:
Warning Device output short is removed and fault is reset.
Supervise:
1. Monitor the voltage by MPU.
2. Report the siren fault to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the siren is restored, send the restore report to the configured destinations of the control panel system. The FAULT indicator is turned off when there is no other system fault.

5.3.3 Warning Device 2 Disconnected

Condition:
Warning Device is disconnected.
Restore:
Supervise:
1. Monitor the voltage by MPU.
2. Report the siren fault to the configured destination programmed on location 140.

3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the siren is restored, send the restore report to the configured destinations of the control panel system.

The FAULT indicator is turned off when there is no other system fault.

5.3.4 Warning Device 2 Short

Condition:
Warning Device output is shorted.
Restore:
Warning Device output short is removed and fault is reset.
Supervise:

1. Monitor the voltage by MPU.
2. Report the siren fault to the configured destination programmed on location 140.
3. Slow flash the FAULT indicator (refer to the detailed description in chapter keypad indicators)
4. When the siren is restored, send the restore report to the configured destinations of the control panel system.

The FAULT indicator is turned off when there is no other system fault.

5.4 Telephone Line Fault

Condition:
Telephone line is broken or disconnected.
Restore:
Telephone line is restored or connected and fault is reset.
Supervise:

1. Monitor the telephone line by MPU all the time when the telephone is idle.
2. As the fault is detected, slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. Once the fault is reset, the FAULT indicator is turned off when there is no other system fault.

5.5 Date and Time Fail

Condition:
Date and time is not set after the system is powered on.
Restore:
Date and time is programmed and the fault is reset. Refer to *Section 3.1.1 Setting date and time* for more information.
Supervise:

1. No report on the date and time fault.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators)
3. No report to the control panel system when the fault is reset and the date and time setting is recorded in non-volatile memory.

The FAULT indicator is turned off when there is no other system fault.

5.6 Communication Failure

The zone indicator 6 lights to indicate Communication Failure. Enter [6] to step to Communication failure list for more information.

5.6.1 Communication Failure 1

Condition:

Panel can not send the report to the Destination 1 after 4 attempts.

Restore:

The fault is reset when the first kissoff tone is received.

Supervise:

1. Report the fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.6.2 Communication Failure 2

Condition:

Panel can not send the report to the Destination 2 after 4 attempts.

Restore:

The fault is reset when the first kissoff tone is received.

Supervise:

1. Report the fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.6.3 Communication Failure 3

Condition:

Panel can not send the report to the Destination 3 after 4 attempts.

Restore:

The fault is reset when the first kissoff tone is received.

Supervise:

1. Report the fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.6.4 Communication Failure 4

Condition:

Panel can not send the report to the Destination 4 after 4 attempts.

Restore:

The fault is reset when the first kissoff tone is received.

Supervise:

1. Report the fault to configured destination on location 140 when the fault is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

5.7 Tamper Condition

The zone indicator 7 lights to indicate Tamper conditions. Enter [7] to step to Tamper conditions list for more information.

5.7.1 On Board Tamper

Onboard Tamper Condition is registered when the Onboard Tamper input (P8) is open.
Condition:
Onboard Panel Tamper input P8 is open.
Restore:
The Tamper condition is reset when the Input is shorted.
Supervise:

1. Report the Tamper condition to configured destination on Location 140 when the Tamper Condition is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Tamper Condition is restored, send the restored report to the configured destinations.

5.7.2 Keypad 1 Tamper

Condition:
Keypad 1 is opened and the Tamper contact is triggered.
Restore:
The Tamper condition is reset when the Keypad is closed.
Supervise:

1. Report the Tamper condition to configured destination on Location 140 when the Tamper Condition is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Tamper Condition is restored, send the restored report to the configured destinations.

The FAULT indicator is turned off when there is no other system fault.

5.7.3 Keypad 2 Tamper

Condition:
Keypad 2is opened and the Tamper contact is triggered.
Restore:
The Tamper condition is reset when the Keypad is closed.
Supervise:

1. Report the Tamper condition to configured destination on Location 140 when the Tamper Condition is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Tamper Condition is restored, send the restored report to the configured destinations.

The FAULT indicator is turned off when there is no other system fault.

5.7.4 Keypad lock out

Condition:
Invalid code is entered more times than allowed by the code retry attempts (programmed in location 179)
Restore:

Keypad lock out is reset when the Keypad lockout time (3min) is expired.
Supervise:

1. Report the Keypad lock out to configured destination on Location 140 when the Keypad lock out is detected.
2. Slow flash the FAULT indicator.
3. The FAULT indicator is turned off when there is no other system fault.

5.7.5 Sensor Tamper

Condition:
Tamper contact is triggered (Zone is programmed as Dual End of Line)
Restore:
Tamper contact is restored and Tamper condition is reset.
Supervise:

1. Report the Sensor Tamper to configured destination on Location 140 when the Keypad lock out is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Sensor Tamper is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

Sensor Tamper Zone Indication

The zone indicator 5 lights to indicate Sensor Tamper conditions.
Enter [5] to step to Zone Indicator list to identify the Zone where the Sensor Tamper comes from.
1=Zone 1 2=Zone 2 3=Zone 3 4=Zone 4 5=Zone 5 6=Zone 6 7=Zone 7 8=Zone 8

5.7.6 Zone Tamper

Condition:
Tamper contact (direct connected to the Zone) is triggered (Zone type = Tamper)
Restore:
Tamper contact is restored and Tamper condition is reset.
Supervise:

1. Report the Tamper condition to configured destination on Location 140 when the Tamper condition is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Tamper is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

Zone Tamper Zone Indication

The zone indicator 6 lights to indicate Tamper conditions.
Enter [6] to step to Zone Indicator list to identify the Tamper Zone.
1=Zone 1 2=Zone 2 3=Zone 3 4=Zone 4 5=Zone 5 6=Zone 6 7=Zone 7 8=Zone 8

5.8 External Fault

Condition:
Fault contact (direct connected to the Zone) is triggered (Zone type = External Fault)
Restore:
Fault contact is restored and Fault condition is reset.

Supervise:

1. Report the Fault condition to configured destination on Location 140 when the Fault condition is detected.
2. Slow flash the FAULT indicator (refer the detailed description in chapter keypad indicators).
3. When the Fault is restored, send the restored report to the configured destinations. The FAULT indicator is turned off when there is no other system fault.

External Fault Zone

The zone indicator 8 lights to indicate External Fault conditions.

Enter [8] to step to Zone Indicator list to identify the zone where the fault input is connected.

1=Zone 1 2=Zone 2 3=Zone 3 4=Zone 4 5=Zone 5 6=Zone 6 7=Zone 7 8=Zone 8

6 System Functions

User Code	Installer Code	Function		Description
•	•	0	#	Duress alarm (Refer to *6.1*)
•	•	1	#	Siren test (Refer to *6.2*)
•	•	2	#	Fault and Tamper analysis (Refer to *6.3*)
•	•	3	#	View date and time (Refer to *6.4*)
•	•	4	#	Walk test (Refer to *6.5*)
•	•	5	#	Event memory recall (Refer to *6.6*)
•	•	6	#	Reset panel/clear siren (Refer to *6.7*)
•	•	7	#	Initiate a modem call (Refer to *6.8*)
•	•	8	#	Send Test report (Refer to *6.9*)
•	•	9	#	Bypass (inhibit) (Refer to *6.10*)
•	•	96	#	Show Zone type (Refer to *6.11*)
•		97	#	Bypass all faults (Refer to *6.12*)
•		98	# *	Enable=# / Disable=* installer code user's access (Refer to *6.13*)
•	•	99	#	Change individual code (Refer to *6.14*)
	•	955	#	Change/View date and time (Refer to *6.15*)
	•	956	#	Add/delete a level 2 user (Refer to *6.16*)
	•	956	#	Add/delete Remote Radio User Codes (Refer to *6.17*)
	•	957	#	Change domestic phone numbers (Refer to *6.18*)
	•	958	#	Enter Programming Mode (Refer to *6.19*)
	•	959	#	Exits from installer’s programming mode without saving the programmed data. (Refer to *6.20*)
	•	960	#	Exits from installer’s programming mode with saving the programmed data. (Refer to *6.21*)
	•	961	#	Resets the control panel to factory defaults. (Refer to *6.22*)
	•	962	#	Copies the control panel memory to the programming key. (Refer to *6.23*)
	•	963	#	Copies the programming key data to the control panel memory. (Refer to *6.24*)
	•	999	#	Displays the software version number or control panel type. (Refer to *6.25*)
Default Pads on PCB				Default the control panel with the hardware (Refer to *6.26*)

6.1 Duress alarm

This function allows code holders to perform a keypad Duress Alarm.
A Keypad Duress Alarm is used as a silent holdup alarm when 0 is added to the end of a valid Code used to disarm the system.

A Duress Alarm is useful only if your system reports to a monitoring station, because domestic reporting format cannot define the type of alarm that occurred.

6.2 Siren Test

This function allows code holders to test Sirens.
Enter your Code + [1] and press [#] two beeps sound and siren's are activated for a 1~2 sec burst. No other sounding device operates during this mode. This function can only be operated as:

1. Disarm
2. No siren output is running.

6.3 Fault and Tamper Analysis Mode

This function allows code holders to identify detailed Faults and Tamper conditions.
There are a number of system faults that can be detected by the control panel. When any of these faults are present, the FAULT indicator flashes and the keypad beeps once per minute. Refer to *Section 5 Fault and Tamper Description, page 28* for more information on each fault type.
To determine the type of fault:

1. Enter your Code + [2] and press [#] two beeps sound
   The STAY, AWAY, and FAULT indicators flash.
   One or more zone indicators (1 - 8) light to indicate the type of fault that occurred.

NOTICE!
It only can be operated in Disarm Mode.

6.4 View date and time

This function allows user code holder to view the date and time

1. Enter your code +[3] and press [#]. Two beeps sound, the STAY and AWAY indicators flash and date + time is shown in the format YYMMDD HHMM.
2. If operation is not carried out within 240 seconds after entering the date and time setting interface, the system will automatically exit from the setting.

6.5 Walk Test Mode

This function allows code holders to test detection devices to ensure they are functioning correctly. Before activating Walk Test Mode, bypass any zones that are not required for testing.
To enter Walk Test Mode:

1. Enter your Code + [4] and press [#] .
   Two beeps sound and the STAY and AWAY indicators flash. The keypad beeps once per sec when Walk Test Mode is active.
2. Unseal and seal the zones to be tested.
   The keypad sounds one second beep and the siren sounds one beep each time when a zone status is changed.
3. Press [#] to exit from this function.
   Two beeps sound and the STAY and AWAY indicators are extinguished. The system returns to the disarmed state.

4. If the operation is not carried out within 240 seconds after entering the walk test mode, the system will automatically exit from the setting.

6.6 Event Memory Recall Mode

This function allows you to play back the last 254 system events that occurred. Event Memory Recall Mode reports all alarms and each arming or disarming of the system and helps with troubleshooting system faults. The events are shown using the keypad indicators.
Defined events are shown using keypad indicators, refer to *Section 8.3 System Event Memory Recall, page 67* for more information.
To enter Event Memory Recall Mode:
Enter your Code + [5] and press # two beeps sound.
Two beeps sound. The events are played back by the keypad indicators in reverse chronological order.
Example
If the events occurred in the following order:

Sequence	Event
1	System armed in AWAY Mode
2	Alarm in Zone 3
3	Alarm in Zone 4
4	System disarmed

Table 6.1 Event Sequence

The alarm memory is played back in this order:

Sequence	Indication	Event
1	All indicators off	System disarmed
2	Zone 4 and away indicators light	Alarm in Zone 4
3	Zone 3and away indicators light	Alarm in Zone 3
4	AWAY indicator lights	System armed in AWAY Mode

Table 6.2 Event Memory Playback

Sequnece indication Event
1. All indicators off System disarmed
2. Zone 4 and AWAY indicators light Alarm in Zone 4
3. Zone 3 and AWAY indicators light Alarm in Zone 3
4. AWAY indicator lights System armed in AWAY Mode

Each event is indicated by a beep and a lit indicator. Resetting a disarmed 24-Hour Alarm is indicated by a beep only.
After the last event, two beeps sound to indicate the end of the playback. You can stop the replay at any time by pressing [#] .
If the system is armed in STAY Mode, the STAY indicator shows the event memory playback.If the control panel is powered down, the memory of all events is saved.

6.7 Reset panel/clear siren

This function allows code holders to reset all Alarms Faults and Tamper conditions.
Enter your code + [6] and press #.

NOTICE!
You can only reset Alarms Faults or Tamper conditions, when the related contact or function is idle.

6.8 Initiate a Modem Call

Enter your Code + [7] and press # two beeps sound and the control panel dials the callback telephone number programmed in Location 154 – 169 in an attempt to connect to the installer's remote computer.
The remote computer must be running the remote programming software and must be set to Waiting for an Incoming Call. If no callback telephone number is programmed, entering code +[7] has no effect.

6.9 Send Test Report

This function allows code holder to send a test report to a Central Monitoring Station (CMS).

1. Enter your code + [8] and press #.
   Two beeps sound and a test report is sent.

6.10 Bypass Zones

This function allows code holders to manually disable one or more zones before arming the system in AWAY Mode or STAY Mode. When a zone is bypassed, access is allowed into that zone when the system is armed without activating an alarm.
The zone should be programmed as bypass zone enable. If the zone is not programmed as bypass zone, then it cannot be bypassed manually as bypass zone.
For example, you might want to isolate a zone before arming the system because a zone passive infrared (PIR) detector is activating false alarms or because you need to leave a pet inside a particular zone while you are away.
Key-switch zone can't be bypassed.
The non-used zone can't be bypassed.
Alarm Zones isolating:

1. Zones that have been bypassed will report to CMS at once.
2. When the zone bypassed is restored, it will send the restore report to CMS immediately.
3. When the system is disarmed again after arming, the bypassed zones will be restored. It will send the bypassed restore report to CMS.

Bypass Steps:

1. Enter your Code + [3] and press [#] . the AWAY and STAY indicators flash.
2. Enter the number of the zone to be bypassed and press [*]. Repeat Step 2 for each zone you want to isolate.
3. To cancel any isolated zone, enter the number of isolated zone and press [*]. Repeat Step 3 for each zone you have bypassed.
4. Press [#] to exit.

For example:
To manually bypass zones 1,3 and 4, press:
[Code][9][#][1][*][3][*][4] [*][#]

6.11 Show Zone Type

This function allows code holders to see the zone type

1. Enter your Code + [96] and press [#] .
   Two beeps sound and the STAY and AWAY indicators flash.
2. Zone type for Zone 1 is shown
3. Press [#] to jump to Zone 2
   Two beeps sound and the STAY and AWAY indicators flash.
4. Repeat this procedure to jump to the other Zones.
5. To exit this function press [*]

6.12 Bypass all Faults and Tamper conditions (Except zone Tamper)

This function allows code holders to bypass faults and Tamper conditions.

1. Enter your code + [97] and press [#].
   Two beeps sound.

NOTICE!
This function works only if loction 183 is 0=disabled. If location 183 is 1=enabled, Faults and Tamper conditions are automatically overwitten.

6.13 Enable Disable installer code user's access

This function allows user code holder to enable or disable the installer code user to access the programming mode

1. Enter your user code +[98] and press [#] to enable the function
   Two beeps sound
2. Enter your user code + [98] and press [*] to disable the function
   Two beeps sound

6.14 Change individual code

This function allows user to change there individual codes.

1. Enter your Code + [99] and press [#] .
   Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the new code and press [#].
   Two beeps sound and the STAY and AWAY indicators are extinguished.

NOTICE!
This function is terminated automatically if you do not press a button within 240 sec or if youpress [#] . One long beep indicates that the code already exists or that an incorrect number has been entered.

6.15 Setting date and time

This function allows the installer code holder to set or view the date and time

1. Enter your installer code +955 and press [#]. Two beeps sound, the STAY and AWAY indicators flash and date + time is shown in the format YYMMDD HHMM.
2. Enter the year, month, day, hour and minute in YY, MM, DD, HH, MM format and press [#]. Use 24:00 hour format when programming the hour of the day. Beep sound and the STAYand AWAY indicators are deactivated. If a long beep sounds, it indicates an erroneous entry of date and time.
3. If operation is not carried out within 240 seconds after entering the date and time setting interface, the system will automatically exit from the setting.

Example

To set the date and time for the 25th of December 2010 at 10:30PM, enter:
[1234] [955][#] break until time is shown [1 0 1 2 2 5 2 2 3 0][#]

6.16 Add/delete User Codes

This function allows the Installer Code holder to change or delete a User Code.

1. Enter your Installer Code +956 and press [#] .
   Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the numbr of the code (1 - 8) you want to change and press [#] .
   Two beeps sound and the corresponding zone indicator lights.
3. Enter the new code and press [#].
   Two beeps sound and the STAY and AWAY indicators are extinguished.
4. Repeat this procedure to change other User Codes.

NOTICE!
This function is terminated automatically if you do not press a button within 240 sec or if you press [#] . One long beep indicates that the code already exists or that an incorrect number has been entered

Example
To program User Code number 2 as 4627, enter:[1 2 3 4] [958] [#][2][#][4 6 2 7][#]
To delete a User Code:

1. Enter your Installer Code + 956 and press [#] . Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the number of the code (1 - 8) you want to change and press [#] . Two beeps sound and the corresponding zone indicator lights.
3. Press [*] to delete the User Code. Two beeps sound and the STAY and AWAY indicators are extinguished.
4. Repeat this procedure to delete other User Code.

NOTICE!
This function is terminated automatically if you do not press a button within 240 sec or if you press [#] . One long beep indicates that the code already exists or that an incorrect number has been entered

6.17 Add/delete Radio User Codes

This function allows the Installer Code holder to add or delete a Remote Radio User Code(if enabeled in location 182)
To add or change a Remote Radio User Code:

1. Enter your Installer Code +956 and press [#] . Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the number of the code (9 - 16) you want to change and press [#] . Two beeps sound and the corresponding zone indicator lights.
3. Press any of the (transmit) buttons on the hand held key-fob. Two beeps sound and the STAY and AWAY indicators are extinguished.
4. Repeat this procedure to change other Remote Radio User Codes.

NOTICE!
This function is terminated automatically if you do not press a button within 240 sec or if youpress [#] . One long beep indicates that the code already exists or that an incorrect number has been entered.

To delete a Remote Radio User Code:

1. Enter your Installer Code + 956 and press [#] . Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the number of the code (9 - 16) you want to change and press [#] . Two beeps sound and the corresponding zone indicator lights.
3. Press [*] to delete the User Code. Two beeps sound and the STAY and AWAY indicators are extinguished.
4. Repeat this procedure to delete other Remote Radio User Codes

6.18 Change Domestic Phone Number

When the system is set up for domestic dialing, this function allows the installer to view and program the telephone numbers that the system calls if an alarm occurs. Refer to *Section 7.5 Domestic Dialing, page 50* for more information.
To change domestic phone number:

1. Enter the installer Code and press [957]. Two beeps sound and the STAY and AWAY indicators flash.
2. Enter the phone number. Each digit appears as you enter it.
3. Press [#] to exit from this mode.

Example
If you want to program telephone number (9672 1777, enter:[Installer CODE + 9 5 7][#][9 6 7 2 1 7 7 7][#]
You can cancel the domestic dialing function at any time. Such as you moved to other placesand do not want the system to dial your working phone number or mobile number any more.
To disable domestic dialing:
Enter the installer Code and press [957], then set the first number as 15.

6.19 Enter Programming Mode

This function allows installer code holders to access the programming modeEnter the installer code + 958 and press [#] .
Two beeps sound and both the STAY and the AWAY indicators flash simultaneously to indicate that you have into entered installer's programming mode.
Once you enter into installer's programming mode, you are automatially positioned at location 000.

6.20 Command 959 – Exit from installer's programming mode without saving the programmed data

This command exits from the installer's programming mode.
You can exit from installer's programming mode from any location. No data will be saved whenthis command is performed.
Exit from Installer's programming mode without saving the programmed data:

Enter [9 5 9 #] under installer's programming mode. Two beeps sound and system returns tothe disarmed state. The STAY and AWAY indicators are deactivated

.

6.21 Command 960 – Exit from installer's programming mode with saving the programming data

This command exits from the installer's programming mode.
You can exit from installer's programming mode from any location.
Exit from installer's programming mode:
Enter [9 6 0 #] under installer's programming mode.Two beeps sound and system resets aftersaving the programmed data and returns to the disarmed state. The STAY and AWAYindicators are deactivated.

6.22 Command 961 – Reset the control panel to factory default settings

This command resets the control panel to factory default value. Default values are listed throughtout this guide and in *Section 10 Programming sheets* on *Page 77*.
To reset the control panel to factory defaults:

1. Enter the installer code (the default is 1234 + 958) and press [#] to enter into installer's programming mode. Two beeps sound and the STAY and AWAY indicators flash on the remote keypad to indicate you have entered into installer's programming mode. The keypad displays the data stored in Location 000
2. Enter [9 6 1 #]. Two beeps and the system is reset to the factory default values.

CAUTION!
Only command [9 6 0 #] performed, the reset factory values will be saved.

6.23 Command 962 – Copy the control panel memory to the programming key

This command copies the control panel memory to the programming key.
To copy the control panel memory to the programming key:

1. Enter the installer code(the default is 1234 + 958)and press [#] to enter into Installer's Programming Mode. Two beeps sound and the STAY and AWAY indicators flash on the keypad to indicate you have entered into the installer's programming mode. AMAX keypad displays the data stored in Location 000.
2. Connect the programming key to the PROGRAMMING KEY pins at the top of the control panel's PCB.
3. Enter [9 6 2 #].
   Two beeps sound after the control panel memory is successfully copied to theprogramming key. A long beep indicates that the programming key is corrupt and must bere-programmed by input [9 6 2 #].
4. Enter command [9 6 0 #] to exit from installer's programming mode.
   The STAY and the AWAY indicators are extinguished on the keypad to indicate that thesystem is disarmed.
5. Remove the programming key from the control panel.

CAUTION!
Failing to exit from Installer's Programming Mode before removing the programming key cancorrupt the programming key.

6.24 Command 963 – Copy the programming key to the control panel

This command copies data from the programming key to the control panel.
To copy the programming key to the control panel:

1. Enter the installer code (the default is 1234 + 958) and press [#] to enter into installer's programming mode. Two beeps sound and the STAY and AWAY indicators flash on the remote keypad to indicate that you have entered into Installer's Programming Mode. The keypad displays the data stored in Location 000.
2. Connect the programming key to the PROGRAMMING KEY pins at the top of the control panel's PCB.
3. Enter [9 6 3 #]. Two beeps after programming key data is successfully copied to the control panel. A long beep indicates that the programming key is corrupt and must be reprogrammed.
4. Enter command [9 6 0 #] to exit from installer's programming mode.
   The STAY and the AWAY indicators are extinguished on the keypad to indicate that the system is disarmed.
5. Remove the programming key from the control panel.

CAUTION!
Failing to exit from Installer's Programming Mode before removing the programming key cancorrupt the programming key.

6.25 Command 999 – Display the software version number

The version structure is: Vx.xx. This command displays the panel software version.

1. Enter [9 9 9 #] under installer's programming mode. The keypad will display the first number.
2. Press [*] to display the next number.

Display example: For the version 3.17
Enter [9 9 9 #] under the programming mode.
The keypad displays 1st number 3; and press [*] to display the 2nd number 1; then press [*] to display the 3rd number 7.
Continue to press [*] and no version number will be displayed.
Enter [9 5 9 #] or [9 6 0 #] to exit from Installer's Programming Mode.
The STAY and the AWAY indicators are extinguished on the keypad to indicate that the system is disarmed.

6.26 Default the control panel with the hardware

If the installer code is lost, the default pads on PCB is used to default the control panel.

1. Disconnect the AC MAINS supply and the backup battery from the control panel.
2. Short the default pads. The default pads is located on the right top of the PCB next to the PROGRAMMING KEY socket.
3. Reconnect the power supply to the control panel.
4. If the LED on the control panel PCB fast flash, release the default pads at once.

5. The control panel is successfully defaulted to the factory settings.
6. If the LED on control panel PCB do not fast flash, the factory default is unsuccessful.

7 System Informations 1

7.1 Zone Processing when arming

When the system is armed, it will do the following process.

Arm precondition:

The system should be disarmed. Also the system should not be in programming mode and walk test mode.

For arming the panel by keypad, force armed conditions are applied:

It can be armed with some zones unsealed when force arm is enabled for these zones, and they are represented by slow flash zone indicators.

When the force arm of a zone is disabled, the zone must be in sealed status for arming the panel.

Arm Performance:

At the end of exit delay time, send the report to the configured destinations of the control panel by setting location 138 or location 139 to 1.

It will not arm until the exit time is up. During the exit time, if the users disarmed the system, then no report is sent.AWAY or STAY indicators are lit to indicate the ARM status.

Send the Battery Low report to the configured destinations of the control panel system if it occurred by the setting of location 140.

NOTICE!

Single button arming in STAY Mode reports as User Code number 18.

Record the event in history.

AWAY ARM will monitor all zones except bypassed zones. STAY ARM will only monitor the unsealed non interior zones.

Refer to *Section 8.1.2 Zone programming, page 57* for different processes with different zone types.

7.2 Zone Processing when disarming

Disarm precondition:

The system is armed.

Disarm performance:

Send the report to the configured destinations of the control panel system by the setting of location 138 or location 139.

AWAY and STAY indicators are extinguished.

For zone not 24-Hour and keyswitch type, send the zone alarm/trouble restore report to the system. Refer to *Section 8.1.9 Zone Fault, page 62* for more information.

Record the event in history.

Restore the bypassed zones.

Unlock the lock out zones.24-Hour zones are always monitored regardless of arm or disarm if it is not bypassed.

Refer to *Section 8.1.2 Zone programming, page 57* for different processes with different zone types.

7.3 Alarm processing

Alarm precondition:

Anytime the 24-Hour zone is violated.
Anytime the tamper is violated.
Keypad alarm operation.
When system is armed and the armed zone, which is not bypassed, is violated.
After the entry delay time runs out, if the system has not been disarmed and the zone has been violated, an alarm occurred.

Alarm performance:

Send the report to the configured destinations of the control panel system.
Flashing the violated zone indicators to indicate the ALARM status.
Activate the related output according to the output configuration.
Activate the keypad buzzer follow the output status by setting Location 370.
Record the event in history.

7.4 Software

You can program or control the AMAX Panel 2000 / AMAX Panel 2000 EN remotely using a PC and remote programming software. This software allows you to change your customer's control panel without leaving your office.

7.4.1 Remote Connect

The remote connect feature allows you to establish a connection through the telephone network from your computer to the AMAX Panel 2000 / AMAX Panel 2000 EN. This software allows you to offer faster service to your clients.

7.4.2 Remote Connect with Customer Control

If you want to configure the control panel to establish a remote connection, it is possible only when the client initiates it through the remote keypad. Program the following information:

– Program the Call Back Telephone Number in Location 154 - 169 .
– Start using remote program in Location 153.

The control panel is now set ready for the client to control and establish a remote connection.
To dial the remote computer:
Enter your code + [7] and press [#].
When the command operates, the control panel calls the remote computer telephone with the remote control software open and is set to Waiting for an Incoming Call.
After uploading /downloading the data, the control panel exits from the remote program and returns to the disarmed state.

7.4.3 Remote Connect with Callback Verification

The control panel receives the call. As the ring count set in Location 152 is reached, it picks up the call and attempts to establish data connection with the remote computer.

NOTICE!
If the connection cannot be established, the control panel regards it as a remote arming command and accepts it.

The control panel hangs up the telephone.
The control panel initiates a callback.
The remote computer is now operating remote programming software and is set to Waiting for an Incoming Call.
After uploading /downloading the data, the control panel exits from callback and returns to the disarmed state.

To program the control panel for remote connection with callback verification:

1. Program the Call Back Telephone Number in Location 154 – 169 .
2. Start using remote program in Location 153.

7.4.4 Remotely Arm/Disarm System by Programming Softwares

Programming softwares can be used to arm/disarm system and User Code 20 is used to send the arming/disarming reports.

7.5 Domestic Dialing

The domestic dialing telephone numbers are stored in Location 120 – 135, which can store up to 16 digits.

7.5.1 Domestic Dialing Function

Only one dialing telephone number will be supported.
When the control panel is activated into zone tamper/ zone alarm, it dials the programmed telephone number.
All alarm events only need one report/acknowledgement.
The transmission sequence is repeated until the control panel receives an acknowledgement tone.
The control panel automatically hangs up after 45 seconds if it cannot dectect the acknowledgement tone. And redial later.
The user presses [#] between two acknowledegement tones to confirm the alarming.
The acknowledgement tone is the DTMF signal sent by the remote user with the [#] .
If the control panel got the [#] acknowledgement from the user, it will send 2 seconds long beep as acknowledge tone and hang up the line.

7.6 Reporting Formats

7.6.1 Transmission Formats

The AMAX Panel 2000 / AMAX Panel 2000 EN provides two kinds of transmission formats, Contact ID and CFSK format, for its dialing and communication features. Program the transmission format for Receiver 1, 2, 3 and 4 separately in Location 023, Location 053, Location 083 and Location 113(refer to *Section 7.7.4 Receiver 1 - 4 Transmission Format, page 53*).The control panel is set at the factory to report in the Contact ID Format.

7.6.2 Contact ID Format

Contact ID Format can identify hundreds of zones by their unique codes. This format provides a single-digit Event Qualifier and a three-digit Event Code that quickly identifies the reported condition.
In general, Contact ID Format is very simple because most of the Event Codes and Point ID Codes are predefined. The base station software usually can identify an alarmed zone by its Point ID Code and usually pays little attention to the Event Code.

Contact ID Message Format

ACCT MT Q EEE GG CCC S
ACCT = Subscriber ID
MT = Message type, H
Q = Event Qualifier
1= New event or Opening
3= New restore or Closing
6= Previously reported off-normal event

EEE = Event Code
GG = Group Number (always 0)
CCC = Zone/ Contact ID, 000 is for no zone/ID message
S = Checksum digit
Note: Any 0 values must be sent as an 0x0A.
Contact ID Report Data:

7.6.3 CFSK Format

The CFSK communication format is a protocol based on the standard Bell 103 FSK (Frequency Shift Keying) modulation, as detailed by the SIA (Security Industry Associaton) “Digit Communications Standard” November 1991.

CFSK Message Format(6/2)
B AAAAAA TE S
B = Begin (1 byte, always 04)
AAAAAA= Subscriber ID (3 bytes)
T= Type of Event Code (1 byte)
E= Event/User/ Zone number (1 byte)
S= Checksum digit (1 byte)
Formular S = Sum of message bytes & 0xFF
Remark:

7.7 Dialer Information

This section outlines the programming information required for the AMAX Panel 200 / AMAX Panel 2000 EN when communicating with a base station receiver. These parameters specify the telephone numbers/IP address to be called, transmission formats and internet communication options.
The control panel can report event information from four on-board dialers. The dialers report to Receiver 1 to Receiver 4 by programming. You can program each dialer with 4 separate telephone numbers/IP addresses and ports, reporting format type and subscriber ID number, and internet communication options if necessary.

Example

You can set up Dialer 1 to report to receiver 1 in CFSK Format and set up Dialer 2, Dialer 3 and Dialer 4 to report to a base station receiver in Contact ID Format only if Dialer 1 is unsuccessful.

To program a telephone number:

Each location in the telephone numbers stores one digit of the telephone number.
Insert a 15 at the end of a telephone number to indicate to the dialer that the end of the telephone number is reached. The dialing sequence is terminated when a 15 appears.

Example

To program the telephone number 9672 1055 as the Telephone Number for Receiver 1, program the following sequence into Location 000 - 016:
[9 6 7 2 1 0 5 5 15 x x x x x x x x]x stands for any digit.To enter a 4-sec pause in the dialing sequence, program a 13. A pause might be necessary when the dialer communicates through an old (slower) telephone exchange or when a PABX system is in place.

Example

To program the number 02 pause 9672 1055, enter:
[0 2 13 9 6 7 2 1 0 5 5 15 x x x x x].
Table 7.1 shows how to program the numbers, keys, and functions for a telephone number.

Digit Required	Number to Program	Digit Required	Number to Program
0	0	8	8
1	1	9	9
2	2	*	11
3	3	#	12
4	4	4 sec pause	13
5	5	Terminal	15
6	6		
7	7		

Table 7.1 Dialing Digits

To program the IP Address and port:

Use no punctuation in IP address. If any unit of IP address is less than 3 digits, use 0 to fulfill the data in the higher bits. The remaining 5 digits will program the port. Port number ranges from 0-65535. Any port is less than 5 digits, use 0 to fulfill the data.

Example

To program the IP Address 10.16.1.222:80 as the IP

Address of Receiver 1, enter the following sequence into Location 000 - 016:[0 1 0 0 1 6 0 0 1 2 2 2 0 0 0 8 0]

NOTICE!

Programming option anti-replay, acknowledge wait time and pulse interval time are only used in Bosch network format.

7.7.1 Telephone number for Receiver 1 - 4/IP Address and Port

(Refer to *Section 10.1.1 Receiver Parameters, page 77*). When the corresponding data format for above programming address is a network communication format, it is explained as an IP Address and Port. For a non network format, it is explained as telephone number.

When the control panel transmits a report, it dials the telephone number/IP Address to contact the monitoring station. If the call is successful, the relevant information is transmitted and the dialer returns to Standby Mode.

Contact your monitoring station for the correct telephone number/IP Address before you program these locations.

7.7.2 Other Network Programming Option

(Refer to *Section 10.1.1 Receiver Parameters, page 77*). When the control panel tansmits a report in network , the following options should be programmed other than the IP Address and port:

Anti-Replay:

Anti-replay prevents unauthorized messages from being sent to the CMS and being recognized as originating from the control panel.

Contact your central monitoring station for the correct setting.

Acknowledge Wait Time

When no callback from the receiver after the acknowledge time is reached, the control panel takes it as an unsuccessful communication and makes another attempt. The time ranges from 5 to 99 sec.

Contact your central monitoring station for the correct setting.

Pulse Interval Time

The pulse is used for both panel and remote receiver to know whether the network connection is good or not. Each time when a pulse is due, the control panel will send a pulse message. The pulse time range is from 1 to 999 minutes. For time less than 3 digits, use 0 to fulfill.
Contact your central monitoring station for the correct setting.

7.7.3 Report Transmission Sequence

(Refer to *Section 10.2.1 Report Options, page 78* and *Section 10.4 Zone Programming, page 81*). If the event has disabled the report (option 0), no report is sent out. The domestic alarm is set as configured.If the report has any destination to contact the panel (option 1, 2, 3, 4, 5, 6, 7), It will call the related destination by related reporting format type and subscriber ID Number.

Attempt rules:

1. **Attempt times and duration**
   The attempt sequency is destination 1, 2, 3, 4 and domestic destination. Some disabled destinations will be ignored.

   When a new report needs to be sent out, the system will send the report based on the report destination programming list.

   For each enabled destination, the panel will retry sending the report to it till the report has been sent to the destination, or till the report buffer overflows and the old report is replaced by new incoming reports.

   For each enabled destination, the retry interval time between two retries is 15 seconds for the 1st retry to 4th retry, and the retry interval time between two retries is 10 minutes for the 5th retry to 8th retry, after the 8th retry the retry interval time between two retries is 60 minutes.

   For all enabled destinations (except domestic destinations), the waiting time for next retry would be cleared to zero as long as there is a new report.
2. **Attempt Priority**
   The attempt priority is destination 1, 2, 3, 4, Domestic. The disabled destinations will be ignored.
3. **Communication Fail Fault**
   If the attempt times for one destination reaches 4, the system will cause the communication fail fault for this destination.
4. **Backup Destination Process**
   If the destination failed for 4 attempts, the pending reports will switch between primary/ backup destinations in this group.If the report option selects 6, only one group: 1, 2, 3, 4 destinations.If the report option selects 7, there are two groups: group 1 is 1, 2 destinations. Group 2 is 3, 4 destinations.The system can save up to a maximum of 50 un-reported events. If the un-reported events are more than 50, it will delete earlier events and only save the last 50 events in the buffer to send out.

7.7.4 Receiver 1 - 4 Transmission Format

(Refer to *Section 10.1.1 Receiver Parameters, page 77*). You can select the transmission format with location options to specify how to transmit the information to the base station receiver. If Contact ID or CFSK format is selected, the information is transmitted by telephone line; if Bosch Network is selected, then it is connected with B420/DX4020 or ITS-DX4020G GPRS. Transmission format is defaulted as Contact ID.

7.7.5 Receiver 1 - 4 Subscriber ID Number

(Refer to *Section 10.1.1 Receiver Parameters, page 77*). The Subscriber ID Number is transmitted to identify the calling control panel. Enter the Subscriber ID Number in the six locations provided for each destination. Any Subscriber ID Number is less than 6 digits, use 0 to full fill the data in the higher bits.

Example

Program Subscriber ID Number as 4729 in six locations: [0 0 4 7 2 9]

7.7.6 Call back Telephone Number

(Refer to *Section 8.6.4 A-Link Plus Software, page 72* and *Section 10.3.2 Remote Programming/ Control, page 79*).This location stores the telephone number to call when Upload/Download is requested or the user enters his code + 7 and presses [#] to initiate a modem call from the control panel to establish a communication link with the remote computer. The computer must be running A-Link Plus RPS software and must be set to Waiting for an Incoming Call. The Call Back Telephone Number is also necessary if remote connect with callback verification is required(refer to*7.4.3* on page *49*)

7.7.7 Ring Count

(Refer to *Section 10.3.1 Ring Count, page 79*). This location sets the number of rings before the control panel answers an incoming call. Setting this count to an acceptable level has an effect only if Remote Arming and the Remote Upload/Download are enabled. Programming this location to 0 prevents the control panel from answering incoming calls regardless of any other programmed options.

7.8 Access Codes

This section describes the access codes used to assign privileges and access functions for User Code holders of the system. There are two types of access codes, the Installer Code and User Codes. Each of these codes allows specific access and operation of control panel functions.

7.8.1 Installer Code

(Refer to *Section 10.6.1 Installer code # 0, page 86*). The Installer Code can be up to four digits long. When the system is in disarmed status and no active alarm, it will access to Installer's Programming Mode.

Installer Code functions allow the installer to execute functions when the system is disarmed. Refer to *Section 6 System Functions, page 38* for more information.Refer to *Section 3.3.1 Programming with the AMAX Keypad 2000, page 14* for more information on system programming.

The installer code works only if its enabled by a user code holder.

7.8.2 AMAX Panel 2000 / AMAX Panel 2000 EN User Codes

(Refer to *Section 10.6.2 User Codes, page 86*.) The AMAX Panel 2000/AMAX Panel 2000 EN Control Panel can have up to sixteen programmable User Codes (1 - 16) to operate the system. You can program User Code 1-8 as keypad user codes and 9-16 as hand-held remote radio keyfob user codes.

To remotely operate the system by hand-held keyfob, program User code 9 – 16 as remote user code.

7.8.3 User Codes

The purpose of User Codes is to arm and disarm the system and perform system functions. Refer to *Section 6 System Functions, page 38*. User Codes 1 to 8 can be one to four digits long. Only User Codes 9 to 16 can be used as remote radio user codes. .

Use User Code 17 to send report when arming/disarming the system by key-switch.Use User Code 18 to send report when arming the system in AWAY Mode or STAY Mode by keypad single button.Use User Code 19 to send report when remotely arming the system by telephone call.

Use User Code 20 to send report when remotely arming the system by A-Link Plus software.

8 System Informations 2

8.1 General overview on zones

8.1.1 Zone Inputs

On-board Inputs:
There are 8 onboard hard-wired inputs for AMAX Panel 2000 / AMAX Panel 2000 EN. An additional input is provided for enclosure tamper but does not subtract from the 8 onboard totals.

On-board Zone Response Time:
Each on-board zone response time is:
Zone Status trigger time >= 400ms, must response
Zone Status trigger time < 300ms, no response
On board Zone EOL

1. **Single EOL:** If 24-zone tamper function is not detected, each zone uses a single 2.2k ohm EOL. The panel can detect the zone as short, normal or open.

Loop Resistance (ohm)			Zone Status
Min	**Typ**	**Max**	
		1430	triggered
1650	2200	2750	normal
2970			triggered

The detectors(sensors) will be connected between zone and COM terminal through EOL series connection (open triggered) or EOL parallel connection (short triggered).

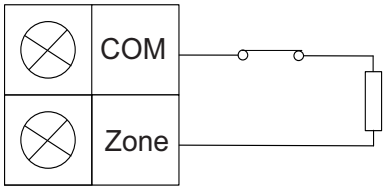


Figure 8.1 Open Triggered

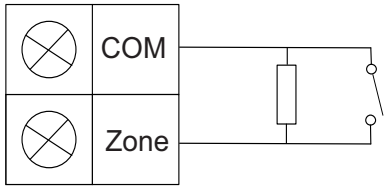


Figure 8.2 Short Triggered

The panel sets the short/open as activate when connecting with single EOL
.The valid zone number is 1-8 for AMAX.

(2) Dual EOL: If the tamper supervision is set, we only can use the NC contact point. The EOL status is :

Loop resistance (ohm)			Zone Status
Min	**Type**	**Max**	

		1430	tamper
1650	2200	2750	normal
2970	4400	4950	trigerred

Using one 2.2K resistor as EOL of the tamper zone, which works together with the zone EOL 2.2K. Refer to the drawing:

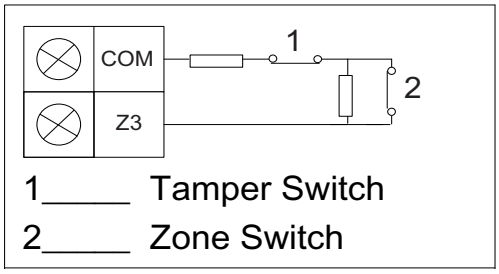


Figure 8.3 Dual EOL

On -board Tamper Input
A separate input is provided for enclosure tamper (This is in addition to the 8 on-board total inputs). The response time of the tamper input is a fixed zone response time.The tamper loop will cause a siren alarm when the loop is open, and will be reported when the loop is open (based the “system status report option”).When powered up, the system will wait for 60 seconds to setup the normal work.

Tamper Switch connector Input:
Close: NormalOpen: AlarmTamper Alarm process is the same as 24-Hour Alarm process (Onboard Tamper is processed as zone number 17).

8.1.2 Zone programming

The programming information for each zone is stored in eight locations to determine how the zone operates, the zone options, and the reporting information for the zone.

Zone Operating Information
These three locations store the Zone Type (for example, Enter/Exit of Delay, Instant or 24-Hour Zone)

Zone Options These two locations allow you to select from a number of options. Refer to *Section 8.1.4 Zone Bypass, page 61* for more information.

Zone Reporting Information
This information includes the locations for the Zone Report Code and the Zone Dialer Options. The Zone Report Code determines whether the control panel sends Alarm Reports for the zone. The Zone Dialer Options location enables you to specify how a zone reports to a base station receiver.

8.1.3 Zone Types

(Refer to *Section 10.4 Zone Programming, page 81*).

0 and 14-15 – Zone Not Used

If a zone is not used, program the zone type location to 0 or 14-15. An EOL resistor is not required if this zone type is not used. This zone type never sounds the sirens or activates the dialer.

1-Instant

The instant zone will perform as below:

1. Disarm: No zone triggerd a report to system
2. AWAY Arm:If the zone is normal, no report to the system. If the zone is triggered and during the exit time, no alarm is reported to system. If the zone is triggered after the exit time, an alarm report is sent to the system depending on the following situations:
   (i)The zone is locked out: no report(ii)Report destination programming
3. STAY Arm: If the zone is normal, no report is sent to the system. If the zone is triggered after arming, an alarm report is sent to the system depending on the following situations:
   (i) The zone is locked out: no report

   (ii) Report destination programming

   Even the instant zone is not yet restored when disarming, a zone restore report is sent to the system. When the system is armed , if the zone is triggered and not bypassed, a fault report is sent to the system.

2-Interior Instant

The interior instant zone will perform as below:

1. Disarm: same as the Instant Zone disarm status
2. AWAY Arm: same as the Instant Zone AWAY Arm status
3. STAY Arm:The LED display. Refer to the LED display definition section. This zone will be ignored and performed as disarm.

If an Interior Instant Zone is not restored when the system is disarmed, a Zone Restore Report is automatically sent to the system.When the system is AWAY armed, if the zone is triggered and not bypassed, a fault report is sent to the system.

3-Delay

The delay zone will perform as below:

1. DISARM: Same as Instant zone disarm status
2. AWAY Arm: If the zone is normal, no report is sent to the system. If the zone is triggered during the exit time, an alarm is sent to the system depending on the following situations:
   - The zone is locked out: no report
   - Report destination programming
   - The zone is armed and triggered:

     (i) During the entry delay time, if the system is disarmed, no alarm report sent out.

     (ii) After the entry delay time, if the system is not disarmed, an alarm report sent to system. During the entry delay time, if the zone is triggered/ normal many times, the system will process it as one time triggered (alarm).

     (iii) If the zone is triggered, the entry delay time is started, and when the entry delay time is up, if the system didn’t disarm, the system will send alarm to the system.

     (iv) If the zone is triggered during entry delay time, and the zone is backed to normal status before the entry time is up, when the entry delay time is up, the system will send alarm restore report to the system.
3. STAY ARM: Same as AWAY ARM performance.
   When the first delay zone is triggered, it will start the entry delay time, all other delay zones will follow the entry time when they are triggered later during the entry delay time.

If a Delay Zone is not restored when the system is disarmed, a Zone Restore Report is automatically sent to the system.

4-Interior Delay

The Interior delay zone will perform as below:

1. Disarm: same as the Instant Zone disarm status
2. AWAY Arm: same as the Delay Zone AWAY Arm status
3. STAY Arm: The LED display. Refer to the LED display definition section. This zone will be ignored and performed as disarm.

If an Interior Delay Zone is not restored when the system is disarmed, a Zone Restore Report is automatically sent to the system.

5-Follower

The follower zone will perform as below:

1. Disarm: same as the Instant Zone disarm status
2. AWAY Arm: If the zone is normal, no report to the system. If the zone is not bypassed and triggered:
   - If follower zone is triggered during the exit delay time, no alarm report sent out.
   - If follower zone is triggered during the entry delay time, the remaining Delay Time is handed over from the Delay Zone to the Follower Zone. The follower zone will performance as the same as the delay zone.
   - If follower zone is first triggered after the exit delay time, the follower zone will activate as the instant zone.
   - If there are 2 or more zones programmed as delay zones and both are triggered , the follower zone will follow the first triggered delay zone.
   - An alarm report sent to system depends on following situations:
     (i) The zone is locked out: no report
     (ii) Report destination programming
3. STAY ARM: Same as the delay zone.
   If a follower Zone is not restored when the system is disarmed, a Zone Restore Report is automatically sent to the system.

6-Interior follower

The interior follower zone will perform as below:

1. Disarm: same as the Instant Zone disarm status
2. AWAY Arm: same as the Follower Zone AWAY Arm status
3. STAY Arm: The LED display. Refer to the LED display definition section. This zone will be ignored and performed as disarm.

If there are 2 or more zones are programmed as delay zones, the interior follower zone will be followed the first triggered delay zone.If an interior follower Zone is not restored when the system is disarmed, a Zone Restore Report is automatically sent to the system.

7-24 Hour Zone

The 24 Hour zone will perform as below:

1. If the zone is normal , no report is sent to the system.
2. If the zone is triggered, an alarm sent to the system whatever is system is in Disarm, AWAY Arm or STAY Arm status.
3. A 24 Hour does not send a Restore Report until the zone is restored.

8-Tamper Zone

The Tamper zone will perform as below:

1. If the zone is normal, no report is sent to the system

2. If the zone is triggered, an alarm is sent to the system whatever the system is disarm, AWAY Arm or Stay Arm status
3. A Tamper-Zone does not send a restore until the zone is restored

9-Fire Zone

The Fire zone will perform as below:

1. If the zone is normal, no report to the system.
2. If the zone is triggered, an alarm occurs on the system whatever the system status is (Disarm, AWAY Arm or STAY Arm).
3. A Fire Alarm does not send a Restore Report until the zone is restored.

10-External Fault Zone

The Fault Zone/Input will perform as below:

1. Disarm: If the Zone is triggered a fault is sent to the system
2. AWAY/STAY Arm If the Zone is triggered a fault is sent to the system

11- Bolt Contact Zone

The Bolt-Contact zone will perform as below:

1. Disarm: If the Zone is triggered no report is sent to the system
2. AWAY Arm: If the zone is normal or triggered no report to the system
3. This zone is mainly for prevention of arming (to ensure exit/entry door is locked before arming the system and no alarm occurs when entering the premise through the entry/exit door)

12-Key switch Toggle

If a zone is programmed as key-switch toggle, it will ignore all other programming items, such as bypass, forcing arm.If the Zone Tamper function is enabled, the zone will process as zone tamper.When a zone is programmed for key-switch arming then that zone is the input for a momentary (toggle mode) keyswitch input. In toggle mode, every time the keyswitch input is triggered the system will be armed.

Zone trigered: AWAY Arm

Zone normal: No effect

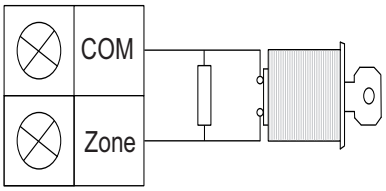
When the system is armed in this mode, the keypad activates two beeps sound and report sent to the system by User Code 17

13-Key switch on/off

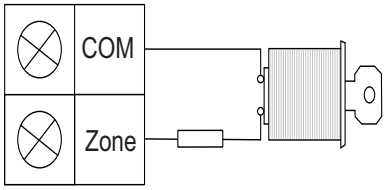
If a zone is programmed as key-switch On/Off, it will ignore all other programming items, such as bypass, forcing arm.If the Zone Tamper function is enabled, the zone will process as a zone tamper. When a zone is programmed for key-switch arming then that zone is the input for a On/Off keyswitch input. In On/Off mode, the control will arm when the zone is zone triggered and disarm when it is normal. This zone allows the system to be armed or disarmed with an on/off switch wired across the keyswitch zone.

Key-switch On/Off Zone activates no alarm event. Zone trigered: Activate AWAY Arm. Zone normal: Activate Disarm

Wiring Diagram for Key-switch Zone: short for arm. The momentary time is capable of lasting Min. 300ms.



Wiring Diagram for Key-switch Zone: short for arm. The momentary time is capable of lasting Min. 300ms.



When the key-switch operates the Arm/Disarm, the keypad sounds two beeps and report sent to the system by User Code17.

NOTICE!
As the key-switch operates the arm/disarm successfully, the siren sounds short to indicate it.

8.1.4 Zone Bypass

If this option is selected, the zone can be automatically isolated when the system is armed. If this option is not selected, the zone cannot be manually isolated. When a zone is manually isolated, a Zone Bypass Report is sent. When isolating 24-Hour Zone, the system automatically sends a Zone Bypass Report when the zone is seleted to be isolated. All non-24-Hour zones send a Bypass Report only when the system is armed. When the zone bypass is restored, a Bypass Restore Report will be sent to the system.Zone Bypass is only effective per armed period and automatically fails after disarmed. The isolated zones ignore all the events triggered and restored before the system disarmed.Key-switch Zone cannot be bypassed.

8.1.5 Forced Arming

If this option is selected, the system can be armed with the zone unsealed. If this option is not selected, the system does not allow the User Code holder to arm the system until the zone is sealed or manually isolated.Arming the system when a zone is triggered is known as forced arming: When arming the system:

1. The system will automatically check the triggered zone when Arming by keypads, keyfob command and keyswitch operation. If the zone is triggered and force arm is disabled and not bypassed, it can't arm successfully and no trouble event will be sent.
2. The system will automatically check the triggered zone when Arming by keypads, keyfob command and keyswitch operation. If force arm is enabled, it can be armed successfully, if the zone is still triggered after the exit time is up , a trouble event will be sent.
3. The zone restore report will be sent when the trouble zone is restored.

Exception case for force arming; Telephone and RPS remote arming. If using telephone and RPS remote arming as arm operation, the system will ignore the force arm programming. It will ARM without checking the characters of force arming.

8.1.6 Silent Alarm

Select this option to program a zone as silent. A silent zone does not activate the siren output. The dialer and all other programmable outputs function according to the parameters programmed for the zone

8.1.7 Zone Lockout

1.No Lockout

Programming the zone lockout option as 0 will disable the lockout function.

2. 1 Time Alarm Lockout

A zone can only alarm (output for Siren and alarm event) up to 1 time per armed period by programming the lockout option as 1. Lockout is activated per arming cycle (that is, a zone programmed for Lockout can activate sirens/report only 1 time). After the system disarm/ arm again, the lockout counting will be reset.The AMAX Panel 2000 / AMAX Panel 2000 EN Control Panel performs lockout:

1. When the zone is triggered an alarm is created and the siren is activated in an alarm (output for siren run) time. During the alarm time, the system will ignore triggered status of this zone.
2. Total of 1 time, the zone will be locked out.
3. During the system alarm time, if any zone alarmed is restored, it will not send out the alarm restore report until the system alarm time is up.
4. If any zone is not programmed as a lockout zone, it will not be limited by the lockout time, even other zones are lockout, if this zone is triggered, it will still occure an alarm.
5. When the zone is triggered 2 times siren/alarm period, the zone will be locked out. And a fault report for this zone will be sent.

3. 3 Times Alarm Lockout

Same as 1 time alarm lockout, but the lock out time is 3.

4. 4- 6 Times Alarm Lockout

Same as 3 times alarm lockout, but the lock out time is 6.

5. Alarm Timer Lockout

Repeat the process of alarm lockout, but no lockout time limits.

8.1.8 Zone Tamper

The system will support the detector tamper of the zone. This will make sure the zone really works in normal status. The process is below:

1. If we use the 24-Hour tamper, we can only use the NC contact point. Refer to zone EOL section, when the zone is programmed to support the 24-Hour zone, it will use the 24-Hour tamper wiring. If the zone detected the 24-Hour tamper triggered, the zone will be processed as 24-Hour zone. If the zone detected as zone alarm, it will be processed as the programmed type.
2. Refer to zone EOL section, when the zone is programmed to disable the 24-Hour tamper zone, it will use the single EOL wiring.
3. If the zone detected the zone alarm triggered, it will be processed as the programmed type.

8.1.9 Zone Fault

This fault operates when the zone fails. The fault is reset when the zone is restored.

The zone fault occurs on any below condition:

1. 24-hour and instant zone, if force-arm enabled and not ready at arm operation, generate a zone trouble event.
2. When the zone is locked out.
3. Delay and follower zone, if force-arm enabled and not ready at exit delay timer expired, generate a zone trouble event.
4. 24-hour zone, if it is not ready at un-bypass time, generate a zone trouble event.

Fault Restore:

1. The zone is normal.
2. Instant, follower, and delay zones when performing the disarm, the system will generate a zone trouble restore if it is still in trouble state.

8.1.10 Zone Report

The control panel will report the zone status. For detailed information refer to *Section 7.7.3 Report Transmission Sequence, page 53*.

8.1.11 Zone Chime Mode

The system will support the chime mode.
The process is as follows:

1. If the chime mode is used and a zone is triggered then the keypad buzzer will sound for 1 second (only in disarmed status).

8.2 System Reporting Information

This section covers features that are involved with basic housekeeping of the system. These include monitoring of the zones if they are isolated from the system, or more importantly, they are actually operating, the status of both the AC MAINS and DC power to the system, and keypad-generated alarms activated by the user.

8.2.1 System Option Programming Definition

If the system programming data is not correct, the keypad beeps to indicate wrong operation but the data is kept as the same.
When the panel is starting, it will follow the Arm/disarm status before the last time the panel power was down/reset.
Quick arming starts.
AC MAINS Fault Report is followed with other report or one hour delayed to send out.When AC MAINS is lost, and battery is lower than 9VDC; or Aux power, keypad power and battery voltage are lower than 9V+ -5, the system will not send out the report to a remote receiver. When one of the voltages rises to 10VDC+ -5, the system will wait for one minute to back to normal work in order to get the stable work status.

8.2.2 System Report and Memory Definition

System Report and Memory List

Event	**CID Event Code**		CID Point ID	**CFSK Event Type**	**Report Type**	**Event Memory**	
						ALL	**EN**
Alarm Burglar	130	1	Zone1-8	01	System status	•	•
Alarm Burglar restore	130	3	Zone1-8	02	Zone Restore	•	
Alarm 24 hour	133	1	Zone1-8	01	System status	•	•
Alarm 24 hour restore	133	3	Zone1-8	02	Zone Restore	•	
Zone fault	380	1	Zone1-8	0E	System status	•	
Zone fault restore	380	3	Zone1-8	0F	Zone Restore	•	
Zone Tamper alarm	137	1	Zone1-8	01	System status	•	•
Zone Tamper alarm restore	137	3	Zone1-8	02	System status	•	
Keypad Tamper	137	1	1,2	01	System status	•	•
Keypad Tamper restore	137	3	1,2	02	System status	•	
Enclosure Tamper	137	1	17	01	System status	•	•
Enclosure Tamper restore	137	3	17	02	System status	•	
Zone Bypass	570	1	Zone1-8	03	System status	•	•
Zone Bypass restore	570	3	Zone1-8	04	Zone Restore	•	
Zone External Fault	150	1	Zone1-8	01	System status	•	•
Zone External Fault restore	150	3	Zone1-8	02	System status	•	
Disarm AWAY	401	1	User0-20	06	Arm/Disarm	•	•
Arm AWAY	401	3	User0-20	07	Arm/Disarm	•	•
Disarm STAY	441	1	User0-20	06	STAY Arm/ Disarm	•	•
Arm STAY	441	3	User0-20	07	STAY Arm/ Disarm	•	•
Keypad Duress	121	1	User0-20	08	Arm/Disarm	•	
Keypad Panic	120	3	0	0D	Keypad Panic	•	
Fire	110	1	0	01	Fire	•	
Fire restore	110	3	0	02	Fire restore	•	
Keypad Emergency	100	3	0	0C	Keypad Emergency	•	
AC fail	301	1	0	05	System status	•	
AC restore	301	3	0	05	System status	•	
Battery fail	309	1	0	05	System status	•	
Battery fail restore	309	3	0	05	System status	•	
Aux Power fail	300	1	1	0E	System status	•	
Aux Power restore	300	3	1	0F	System status	•	

Option Bus Power fail	300	1	2	0E	System status	•	
Option Bus Power restore	300	3	2	0F	System status	•	
RF Power fail	300	1	3	0E	System status	•	
RF Power restore	300	3	3	0F	System status	•	
Codepad fail	330	1	1,2	0E	System status	•	•
Codepad fault restore	330	3	1,2	0F	System status	•	
DX3010 fail	330	1	3	0E	System status	•	•
DX3010 restore	330	3	3	0F	System status	•	
DX4020/G fail	330	1	4	0E	System status	•	•
DX4020/G restore	330	3	4	0F	System status	•	
Code Retry Limit exceeded	421	1	0	0EF7	System status	•	•
Communication fail	350	1	Destination 1-4	0EF7	System status	•	•
Communication restore	350	3	Destination 1-4	0FF7	System status	•	
Telephone/IP test report	602	1	0	0900	CFG Test		
Config changed	306	1	0	050C	System status	•	
Warning Device short	324	1	1,2	0112	System status	•	•
Warning Device disconnect	324	1	1,2	0112	System status	•	•
Warning Device restore	324	3	1,2	0212	System status	•	
Phone Line fail	351	1	0		System status	•	•
Phone Line restore	351	3	0		System status	•	
Date Time set						•	
User Code change						•	•
Enter Program Mode						•	
Exit Program Mode							
System reset						•	
Installer Access authorized						•	•
Installer Access revoke						•	•
System restore						•	
Faults/Tamper overridden						•	•

Table 8.1 System Report and Memory List

User code for arming/disarming report

Arming/Disarming Method	AWAY/STAY arming	Disarming
Key-switch zone	User 17 (Only AWAY arming)	User 17
Single button arming	User 18	NA

Arming/Disarming Method	AWAY/STAY arming	Disarming
Remote telephone arming	User 19	NA
Remote PC arming	User 20	NA

Tamper Status – Tamper Report
If a tamper occurs, it will send the tamper alarm report to configured destinations.

Zone Status – Bypass Report
A zone is bypassed when it is manually isolated. A Zone Bypass Report is sent at the end of Exit Time for any zone that was manually isolated. A 24-Hour Zone sends a Zone Bypass Report when the zone is selected to be isolated manually.A Zone Bypass Restore Report is sent when the system is disarmed. All bypassed zones are automatically cleared when the system is disarmed.

Zone Status – Fault Report
A zone fault report is sent when the system is unsealed at the end of Exit Time and the zone is automatically bypassed. A zone fault report is not sent when a 24-Hour zone is unsealed after the Exit Time. A Fault Restore Report is sent for non-24-Hourr Zones when the zone is resealed or the next time the system is disarmed (whichever happens first). A 24-Hour Zone sends a restore signal only when it is resealed.

Zone Status – Alarm Restore Report
An alarm restore Report is sent to the base station destination when the alarm is restored from STAY/AWAY Mode.If a non-24-Hour zone is not restored when the system is disarmed, the system automatically sends a Zone Restore Report for that zone. All 24-Hour zones send a Zone Restore Report only when the zone is restored.

Zone Status - Arm/Disarm Report
A Disarm Report is sent to the base station destination when the system is disarmed from STAY/AWAY Mode. An Arm Report is sent at the end of Exit Time when the system is armed in STAY/AWAY Mode.

Keypad – Duress Report
A Duress Report is sent to the base station destination when 0 is added to the end of any valid User Code used to disarm the system. This alarm is always silent. A Duress Alarm can be triggered during Exit Time (in other words, if the system is armed and then disarmed by adding 0 to the end of the User Code before Exit Time expires, a Duress Report is transmitted). Adding 0 to the end of a User Code when arming the system does not cause a Duress Alarm.

Keypad – Panic Report
A Panic Alarm Report is sent to the base station destination when a user presses either [1] and [3] or [*] and [#] at the same time.Restore Reports are not sent for this event.

Keypad – Fire Report
A Fire Alarm Report is sent to the base station destination when a user presses [4] and [6] at the same time.Restore Reports are not sent for this event.

Keypad – Medical Report
A Medical Report is sent to the base station destination when a user presses [7] and [9] at the same time.Restore Reports are not sent for this event.

System Status – AUX Power Supply Fail Report
A System Fault Report is sent when the AUX Power Supply is fail.

System Status – AUX Power Supply Fail Restore Report
A System Trouble Restore Report is sent when the failed keypad AUX Power Supply is restored.

System Status – AC Fail Report
An AC Fail Report is sent to the base station destination when the AC MAINS supply is disconnected.

System Status - AC Fail Restore Report
An AC Fail Restore Report is sent when the AC MAINS supply is connected.

System Status – Low Battery Report
A Battery Test Failure Report is sent to the base station destination when a dynamic battery test detects a low capacity battery or the battery voltage falls below 11.5VDC+ -5%.The control panel continually monitors the battery voltage. A dynamic battery test is performed every time the system is armed and every four hours1827 after the control panel is powered up

System Status – Access Denied (Code Retry)
An Access Denied Report is sent to the base station destination when the number of incorrect code attempts equals the number programmed. Restore reports for this fault are not transmitted.The Code Retries feature restricts the number of times an invalid User Code can be entered in an attempt to operate the system. Programming sets the number of incorrect code attempts that causes an alarm. When the number of incorrect code attempts equals the number programmed in this location, the system performs these actions:
– Activates the sirens and other alarm output.
– Shuts down all keypads for 3 minutes.
– Sends an Access Denied Report to the base station destination.

8.2.3 Auto Test Report
The system supports to send the test report automatically.The test report can be programmed as routine and daily timer.
– When programmed the address 145-146 as 1-99, it will send the routine test report based on the assigned hours set in the location. When programmed the address 145-146 as 0, no routine test report.
– When programmed the address 147-150 as real time data, the system will send the real time report at the same time of every day. If the users need the real time report, the date and time must be set, otherwise, no test report is sent out. If program data is out of the hour/minute range, the daily timer test report will be disabled.

8.3 System Event Memory Recall
There are two Event Memory’s one for ALL EVENTS and one for EN EVENTS. Up to 254 system events can be recorded in event memory in chronological order. These events are with date and time information and stored in non-volatile memory.

For Event records refer to*Table 8.1, Page 65*.

8.3.1 Keypad Play Back System Events
When Installer Code/Master Code function is used to play back the events, only five system events in below table can be shown using the keypad indicators.

Event	Keypad Indication
Zone Alarm or Tamper (Zone1-8)	LED 1-8 light
Tamper Alarm	FAULT Indicator lights
STAY Arming	STAY Indicator lights
AWAY Arming	AWAY Indicator lights
System Disarming	All indicators are extinguished

Detailed process is as below:

1. When the Code holder operates the below command:
   [PIN] + [5] + [#]
   The system display the above five types of system events.
2. Other events will not display on the keypad.
3. Each event displays one second and activate the short beep sound on the keypad. The events are played bace in reverse chronological order.

Press [#] to exit from the Event Play Back Mode at anytime.

8.4 Output Process

The AMAX Panel 2000 / AMAX Panel 2000 EN Control Panel has three outputs on the main board and 8 outputs on the DX3010 relay module. Output type, mode and duration of each output. The Output 1 is used as Siren alarm. During the alarm duration, the system can reset the alarm by command “reset” . The other outputs can be programmed to follow up different events.

8.4.1 Output Events Option

0 – No output activate for the events

This output doesn’t operate for any events codes. OC outputs are open status. Relay is normal open status.

1 - System Disarmed

OC output are open on below conditions:

1. System disarmed after system reset
2. System operated the disarm command

The output is reset:

1. When the system is armed
2. When the output programmed duration is up

2 – System Armed

OC output are open on below conditions:

1. System armed after system reset

System operated the arm command and until system is armed. (When system is operating the arm command, the system will arm after the exit delay time is up.)

The output is reset:

1. When the system is disarmed
2. When the output programmed duration is up.

If this duration is programmed as 000, the output will continue till the system disarmed.

3 – System Alarm

This output operates when the system is occurred an alarm.

The output is reset:

1. When the system is disarmed

2. When the output programmed duration is up.

When a new alarm occurred, the alarm will reset the alarm time.

If this duration is programmed as 000, the output will continue till the zone restore or system disarmed.

4 – Entry/Exit Delay Warning

Entry Delay Warning

This output operates during Entry Time.

The output is reset:

1. When the system disarmed
2. When Entry Time expires
3. When the output programmed duration is up.

Exit Delay Warning

This output operates during Exit Time when the control panel is armed.

The output is reset:

1. When the system is disarmed
2. When Exit Time expires
3. When the output programmed duration is up.

If this duration is programmed as 000, the output will continue till the delay warning duration is up.

5 – Telephone Line Fail

This output operates when detected the telephone line is disconnected

The output is reset:

1. When the Telephone line is restored.
2. When the output programmed duration is up.

If this duration is programmed as 000, the output will continue till the telephone line is restored.

6 – AC MAINS Fail

This output operates when the AC power supply input to main PCB is lost.The output is reset:

1. When the AC power supply is restored
2. When the output programmed duration is up.

If this duration is programmed as 000, the output will continue till the AC MAINS power is restored.

7 – Low Battery

This output operates when a Dynamic Battery Test detects the battery failed or the battery voltage is below defined value. The Dynamic Battery Test is performed every 4 hours after the system is powered up and every time the system is armed.The output is reset:

1. Only after a Dynamic Battery Test report that the backup battery voltage is normal.
2. When the output programmed duration is up.

8 - RF Power Fault

This output operates when RF power is lost. The output is reset:

1. When the output programmed duration is up.
2. If this duration is programmed as 000, the output will continue till the RF power is Restored and the fault is reset.

9 - Tamper

This output operates when a Tamper condition occurs. The output is reset:

1. When the output programmed duration is up.

2. If this duration is programmed as 000, the output will continue till the Tamper condition is Restored and Tamper is reset.

10 - External Fault

This output operates when an External Fault occurs. The output is reset:

1. When the output programmed duration is up.
2. If this duration is programmed as 000, the output will continue till the External Fault is Restored and the fault is reset.

11 - All Faults

This output operates when a Fault occurs. The output is reset:

1. When the output programmed duration is up.
2. If this duration is programmed as 000, the output will continue till the Fault is Restored and the fault is reset.

12 - AWAY Armed

This output operates when System is AWAY Armed. The output is reset:

1. When the output programmed duration is up.
2. If this duration is programmed as 000, the output will continue till the System is Disarmed.

13 - STAY Armed

This output operates when System is STAY Armed. The output is reset:

1. When the output programmed duration is up.
2. If this duration is programmed as 000, the output will continue till the System is Disarmed.

14 - 24h Alarm

This output operates when a 24h alarm occurs. The output is reset:

1. When the system is reseted
2. When the output programmed duration is up

When a new alarm occurred, the alarm will reset the alarm time.

15 - Reset

This output operates when a reset is performed in the system.

8.4.2 Output Type

The outputs have two kinds of type:

0 – Steady Output

The polarity is stable low electrical level output.

1 – Pulse Output

The polarity is pulse output.

8.4.3 Output Duration

Each output duration can be programmed. The output duration is based on each Event. Once the Event condition is reset or the programmed output duration is up the output is reseted. The outputs duration can be set by the 3 addresses from 000-999(000=on / 001-999 seconds) for needed.

For example, to program the siren output duration 5 minutes, program address 372-374 as [3 0 0], 300 secs is 5 minutes.

8.4.4 Keypad Buzzer Alarm Output

To set Location 370 as 1 when an alarm is occurring and the keypad buzzer is used to activate the alarming. When the keypad buzzer is default then there is no output in an alarm.

8.4.5 Optional Relay Output

There is one optional relay output controlled connector. The programming character is the same as on board OC 2 output. The default programming data is DISABLED.

8.4.6 On-board LED Indicator

The red LED indicator on the main printed circuit board indicate the system status.

1. Slow flash: the system works normally.
2. Fast flash: Retrieve the factory setting installer code when power up or panel is in dialing condition.

8.4.7 DX3010 Support

The system will support the DX3010 8 relay option bus module for more outputs. The programming character is the same as on board OC 2 outputs. The default programming data is DISABLED.

The control panel works with DX3010:

1. Steady output:DX3010 is steady output.
2. Pluse output:DX3010 is pulse output: 500ms on, 500ms off.

8.5 System Event Time

The section covers the features that involve timing.

8.5.1 Entry Time

You can program Entry Time from 0 to 255 sec in increments of 1 sec. Entry Timer is the delay time used by Delay Zones. Refer to *Section 10.4 Zone Programming, page 81*for more information.

8.5.2 Exit Time

You can program Exit Time from 0 to 255 sec in increments of 1 sec. When arming the system in AWAY Mode, the remote keypad beeps during Exit Time until the final 10 sec, when the keypad sounds one continuous beep to indicate the end of Exit Time is near.

8.5.3 Keypad Lockout Time

All keypads are locked out for the programmed time if an invalid code is entered more times than allowed by the code retry attempts programmed in Location 179. The keypad lockout time is programmed as 3 minutes.

8.5.4 System Power Up Wait Time

The system will not operate zone detection in one minute after the system is powered up for the Installer to finish the installation

8.5.5 AC MAINS Fail Wait Time

The AC MAINS Fault report is sent out with other fault reports or one hour delayed

8.6 Optional Equipment

BOSCH Group manufactures a number of accessories that can be used in conjunction with the AMAX Panel 2000 / AMAX Panel 2000 EN Control Panel. These optional pieces of equipment enhance certain features to make the system extremely flexible.

8.6.1 RE012 E 2-Channel Hand-Held Keyfob 433 MHz

This hand-held radio keyfob RE012/E operates the system remotely. Cooperating with WE800E, the keyfob can remotely arm and disarm the system .

8.6.2 WE800E 433 MHz RF Receiver

This interface allolws the use of up to eight radio User Codes (9 - 16). This is useful if you want the system to be radio controlled and you would like to give your customer total control using a radio hand-held remote transmitter.

8.6.3 ICP-EZPK Programming Key

The programming key copies and stores all information programmed in your control panel. The programming key can hold all your common configuration data such as monitoring station telephone numbers and zone reporting channels.

8.6.4 A-Link Plus Software

This A-Link Plus software package is designed to program the AMAX Panel 2000 / AMAX Panel 2000 EN Control Panel by remote connect methods. This software can access all options and features and in addition to maintaining history and service reports. Program options to use this feature in Location 153. Refer to *Section 7.4 Software, page 49*for more information.

8.6.5 DX3010 8 Relay Module

Eight programmable relay outputs provided by this module.Set in Location 150 to use DX3010 as below:

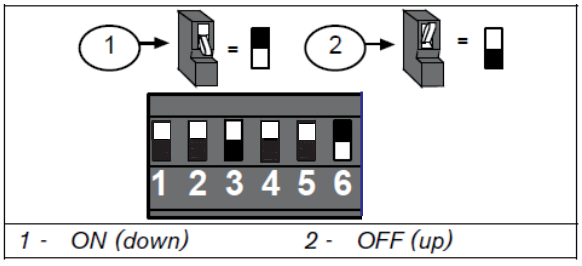


Figure 8.4 DX3010 Location Setting

8.6.6 B420/DX4020/ITS-DX4020G GSM GPRS Communication Module

The AMAX Panel 2000 / AMAX Panel 2000 EN Control Panel supports one B420 or one DX4020 network communication module or ITS-DX4020G GSM/GPRS communication module. Only one can be selected to connect in one system to send reports thought the network.
Set in Location 134 to use B420/DX4020/ITS-DX4020G as below:

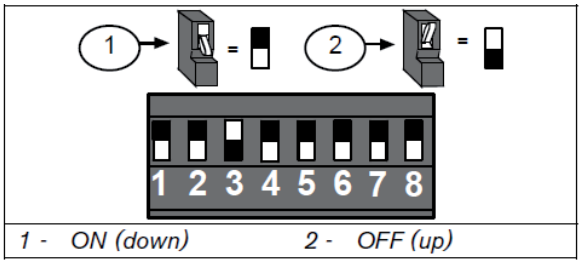


Figure 8.5 DX4020 Location Setting

ITS-DX4020G is configured by connecting with the PC. Refer to ITS-DX4020G manual for more information.

8.6.7 IUI-AMAX-LED8 8 Zone LED Keypad

This keypad operates with the AMAX Panel 2000 / AMAX Panel 2000 EN control panel. It provides indications for up to eight zones.

8.6.8 IUI- AMAX- LCD8 8 Zone LCD Keypad

This keypad operates with the AMAX Panel 2000 / AMAX Panel 2000 EN control panel. This keypad has a fixed icon display and provides indications for up to eight zone. The AMAX Panel 2000 / AMAX Panel 2000 EN support a maxmium of two keypad.To use the two keypads at the same time, jumper short the address of one keypad to avoide address confliction.

9 Technical Data

9.1 Specification

Panel	
Enclosure :	
Dimensions (HxWxD):	– 260mm x 280mm x 83,5mm
Weight:	– 1950g
Environmental Considerations:	
Relative Humidity:	– 10%-95%
Operating Temperature:	– -10°C - +55°C
Supervised Zones:	
Onboard:	
Z1 - Z8 COM	– 8 Single or dual end-of-line (EOL 2,2KΩ) tamper point support
P8 Tamper	– Enclosure tamper input (does not reduce point capacity)
Programmable Outputs (PO):	
Onboard:	
OC 1	– supervised output max 500mA
OC 2	– supervised output max 500mA
P7 Relay output	– max 100mA
Auxiliary module (DX3010):	
Relay 1-8	– Contacts rated 5A at 28VDC
Cable requirements:	– Unshielded and shielded 0,6-0,8mm
Number of...	
Users:	– 16 (8 + 8Keyfob)
Key Fobs:	– 8
Events:	– 254 history events, stamped with time and date
	– 254 EN history events, stamped with time and date
Pin Code variations	– 10000
DX 3010:	– 1
B 420 or DX 4020 or DX 40206	– 1
Keypads:	– 2
Power:	
Power Supply Type:	– A
Transformer:	– 230V Input/18VAC 20VA Fuse=500mA
AC Input:	– AC Input Voltage: 195 VAC to 253 VAC
	– Line Voltage Frequency: 50 Hz
DC Output:	– maximum current for all components 1100mA
	– maximum current for all components 550mA (recharge Batt 80% in 72h)

Aux (+12V/GND) Output:	– Nominal Output Voltage under AC line input: 13,5 VDC +3% / -5%
	– Output Voltage Range under AC line input: 12,82 VDC to 13,9 VDC
	– 500mA maximum
	– Vpp (max) 675mV
Option Bus:	– Nominal Output Voltage under AC line input: 13,5 VDC +3% / -5%
	– Output Voltage Range under AC line input: 12,82 VDC to 13,9 VDC
	– 500mA maximum
RF Power Output	– 5VDC / 100mA maximum
Panel PCB	– Quiescent current maximum 100mA
Battery:	– D126 (12V/7 Ah) sealed, lead acid rechargeable
	– Low battery condition is below 11,8 VDC
	– Minimum battery condition is 10,8VDC
	– Maximum auxiliary current to recharge standby battery to 80% within 72h:
	– 12 V/7 Ah Battery: 550 mA
Certification:	– EN 50131-3 Grade-2 Env-II

Keypads:	
IUI-AMAX-LED8 (8Zone LED Keypad)	
Relative Humidity:	– 10%-95%
Operating Temperature:	– -10°C - +55°C
Input Voltage range:	– 10VDC - 14VDC
Current Consumption	– standby 24mA
	– maximum 50mA
Cable requirements:	– four wire, unshielded and shielded 0,6-0,8mm
	– maximum length 150m
EN type:	– B
IUI-AMAX-LCD8 (8Zone LCD Keypad)	
Relative Humidity:	– 10%-95%
Operating Temperature:	– -10°C - +55°C
Input Voltage range:	– 10VDC - 14VDC
Current Consumption	– standby 18mA
	– maximum 60mA
Cable requirements:	– four wire, unshielded and shielded 0,6-0,8mm
	– maximum length 150m
EN type:	– B

9.2 Interface Description

9.2.1 Terminals Internal Description

Terminal	Description
18 VAC	These two terminals are the plug-on type and are the terminal points for the transformer. To ensure correct operation, the voltage of the transformer must be 18 VAC to 22VAC at 1.3 A (minimum)
+BATTERY –BATTERY	The + Battery terminal connects to the Red positive lead of the battery and the – Battery terminal connects to the black negative lead of the battery. The battery should be a 12 VDC sealed lead-acid rechargeable type with a 7 AH capacity.
OC + OC2OC1	The group of terminals provides 2 programmable open collector outputs; the Maximum rated current is 500 mA for each OC output, with overload and short circuit protection function.
+12V GND	Independent Power output, +12 V is the positive polarity and GND is negative polarity.Output voltage: 13.5 VDC +3%/-5% (at AC power), 10 VDC ~ 13.7 VDC (only battery power) , the Maximum rated current is 500 mA, with overload and short circuit protection function.
R B G Y	The group of terminals is OPTION bus interface terminals; connect with the external option bus module such as IUI-AMAX-LED/LCD keypad, DX3010 module. R is power + and B is power -, G is data out and Y is data in. R and B can be regarded as another independent power output. Output voltage: 13.5 VDC +3%/-5% (at AC power), 10 VDC - 13.7 VDC (only battery power), the Maximum rated current is 500 mA, with overload and short circuit protection function.
Z1-Z8 COM	These terminals are provided to zone detectors.
TIP TIP1 RING1 RING	These terminals are provided for telephone line connection. TIP and RING are connected to external telephone line input. TIP1 and RING1 are connected to housing telephone line.

9.2.2 Connector Interface Description

Connection	Description
P3 Connector +5V RFIN GND	The Connector is for RF receiver connection. +5V and GND provides a 5 VDC power to WE 800 E RF receiver. RFIN is data in from WE 800 E RF receiver.
P8 Connector	The Connector is for tamper switch input.

10 Programming sheets

10.1 Receiver Programming

10.1.1 Receiver Parameters

Report Options	Location	Default	
Telephone Number/IP Address and Port for Receiver 1	000-016	15	
Subscriber ID Number for Receiver 1	017-022	000000	
Transmission Format for Receiver 1(0=Not used, 1=Contact ID, 2=CFSK, 3=Bosch Network)	023	1 EN=1	
Anti-replay for Receiver 1 0=Disable,1=Enable	024	1	
Acknowledge Wait Time for Receiver 1 (05 – 99 seconds)	025-026	05	
Pulse Interval Time for Receiver 1(001 – 999 Minutes)	027-029	001	
Telephone Number/IP Address and Port for Receiver 2	030-046	15	
Subscriber ID Number for Receiver 2	047-052	000000	
Transmission Format for Receiver 2(0=Not used, 1=Contact ID, 2=CFSK, 3=Bosch Network)	053	1	
Anti-replay for Receiver 2 0=Disable, 1=Enable	054	1	
Acknowledge Wait Time for Receiver 2 (05 – 99 seconds)	055-056	05	
Pulse Interval Time for Receiver 2(001 – 999 Minutes)	057-059	001	
Telephone Number/IP Address and Port for Receiver 3	060-076	15	
Subscriber ID Number for Receiver 3	077-082	000000	
Transmission Format for Receiver 3 (0=Not used, 1=Contact ID, 2=CFSK, 3=Bosch Network)	083	1	
Anti-replay for Receiver 3 0=Disable, 1=Enable	084	1	
Acknowledge Wait Time for Receiver 3 (05 – 99 seconds)	085-086	05	
Pulse Interval Time for Receiver 3 (001 – 999 Minutes)	087-089	001	
Telephone Number/IP Address and Port for Receiver 4	090-106	15	
Subscriber ID Number for Receiver 4	107-112	000000	
Transmission Format for Receiver 4 (0=Not used, 1=Contact ID, 2=CFSK, 3=Bosch Network)	113	1	
Anti-replay for Receiver 4 0=Disable, 1=Enable	114	1	
Acknowledge Wait Time for Receiver 4 (05 – 99 seconds)	115-116	05	
Pulse Interval Time for Receiver 4 (001 – 999 Minutes)	117-119	001	

– IP address is programmed as 17 digits data code. Digit 1-12 is for receiver IP address, digit 13~17 is for communication port.

The dot does not need to be programmed. The IP address is combined by 4 units, each unit has 3 digits. If any unit is less than 3 digits, use 0 to fulfill the data in the higher bits. If the port number is less than 5 digits, use 0 to fulfill the data in the higher bits.

Example: For IP Address for receiver 128.73.168.7, communication port 7700, program as: 128 073 168 007 07700

NOTICE!
Programming option anti-replay, acknowledge wait time and pulse interval time are only used in Bosch network format.

10.1.2 Domestic Programming

Location	120-135		
Default	15(Enter 15 as the first digit is to disable the function) EN=15		
Digit	**Programming Key**	**Digit**	**Programming Key**
0	0	8	8
1	1	9	9
2	2	*	11
3	3	#	12
4	4	4 Sec Pause	13
5	5	15	15
6	6		
7	7		

10.2 System Report Options Programming

System sends reports to Receiver 1-4 according to system status report options. The locations for the reports are 137-144.

10.2.1 Report Options

Location 137-144	**Location**	**Default**	
Zone Restore Report Options (Alarm restore, fault restore, bypass restore)	137	0	
Arm/Disarm report option in AWAY Mode	138	6	
Arm/Disarm report option in STAY Mode	139	6	
System Status Report Options (Zone fail, comm. fail, telephone line fail, AC fail, low battery...etc.)	140	6 EN=1/5/6/7	
Keypad panic report	141	0	
Keypad fire report	142	0	
Keypad medical report	143	0	
Test report options	144	6 EN=1/5/6/7	

Zone Status Reporting Options	
0	No zone status report allowed
1	Report to Receiver 1
2	Report to Receiver 2
3	Report to Receiver 3
4	Report to Receiver 4
5	Report to Receiver 1,2,3,4

Zone Status Reporting Options	
6	Report to destination 1 (2,3,4 backup)
7	Report to destination 1 (2 backup) and destination 3 (4 backup)

NOTICE!
The system sends no report when programmed to report to the receiver as Option 0.

10.2.2 Test Report Time Interval Setting

Location 145-150	
	Default
145-146=timer test report(1-99 hours)0=don't send timer test report	24 EN=1-24
147-148=Report time: Hours=0-23(else=don't send real time test report)	99
149-150=Report time: minutes=0~59(else=don't send real time test report)	99

10.3 System Functions Programming

10.3.1 Ring Count

Location 152	Location	Default	
0=Panel does not answer 1–15= Number of rings until panel answers	152	0	

10.3.2 Remote Programming/Control

Location 153	Location	Default	
0=Disable 1=Enable	153	1	

10.3.3 Call back Telephone Number

Location 154-169	Location	Default	
15 = telephone termination	154-169	15	

10.3.4 Exit Time

Location 170-172	Location	Default	
000-255 seconds	170-172	045	

10.3.5 Entry Time

Location 173-175	Location	Default	
000-255 seconds	173-175	045 EN=45	

10.3.6 Keypad Lockout

Location 179	Location	Default	
1 - 15= attempt times 0=no lockout	179	6 EN=10	

If an invalid code attempts more times than programmed, the keypad is locked out for 3 minutes.

10.3.7 Single Button STAY/AWAY ARM

Location 180	Location	Default	
0=Disable 1=Enable	180	1 EN=0	

10.3.8 Remote Arm by Software/Telephone

Location 181	Location	Default	
0=Disable 1=Enable	181	1 EN=0	

10.3.9 Arm by Keyfob

Location 182	Location	Default	
0=Disable 1=Enable	182	1 EN=0	

10.3.10 Force Arm as system is in trouble

Location 183	Location	Default	
0=Disable 1=Enable	183	1 EN=0	

10.3.11 Quick Emergency Alarm

Location 184	Location	Default	
0=Disable 1=Enable	184	1	

10.3.12 Event Recall

Location 182	Location	Default	
0=Disable 1=Enable	185	1	

10.3.13 OC1/Warning Device 1 Monitor

Location 186	Location	Default	
0=Disable 1=Enable	186	0 EN=1	

10.3.14 OC2/Warning Device 2 Monitor

Location 187	Location	Default	
0=Disable 1=Enable	187	0 EN=1	

10.3.15 Phone line Monitor

Location 188	Location	Default	
0=Disable 1=Enable	188	0 EN=1	

10.3.16 AC Fault Detect time

Location 189-190	Location	Default	
0-60 Minutes	189-190	10	

10.3.17 Battery Detect time

Location 191	Location	Default	
1-15 min	191	1 EN=15	

10.3.18 Event Record Count Per Set/Unset Period

Location 192	Location	Default	
3-10	192	3	

10.3.19 Beep for Warning Devices

Location 193	Location	Default	
0=Disable 1=Enable	193	0	

10.4 Zone Programming

Location 210-289			
Zone	**Location**	**Default**	
Zone #01			
Zone Type (Refer to zone type option)	210	3	
Zone Bypass (Disable=0, Enable=1)	211	1	
Forced Arming (Disable=0, Enable=1)	212	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	213	0 EN=0	
Zone alarm lock out time (Disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	214	0	
Support Detector Tamper (Disable=0, Enable=1)	215	1	
Zone alarm report (Refer to zone report option)	216	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	217	0	
Reserved	218-219	0	
Zone #02			
Zone Type (Refer to zone type option)	220	1	
Zone Bypass (Disable=0, Enable=1)	221	1	
Forced Arming (Disable=0, Enable=1)	222	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	223	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=3)	224	0	
Support Detector Tamper (Disable=0, Enable=1)	225	1	
Zone alarm report (Refer to zone report option)	226	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	227	0	
Reserved	228-229	0	
Zone #03			
Zone Type (Refer to zone type option)	230	1	
Zone Bypass (Disable=0, Enable=1)	231	1	
Forced Arming (Disable=0, Enable=1)	232	1 EN=0	

Silent Alarm (Enable=1, Disable=0)	233	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	234	0 EN=4	
Support Detector Tamper (Disable=0, Enable=1)	235	1	
Zone alarm report (Refer to zone report option)	236	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	237	0	
Reserved	238-239	0	
Zone #04			
Zone Type (Refer to zone type option)	240	1	
Zone Bypass (Disable=0, Enable=1)	241	1	
Forced Arming (Disable=0, Enable=1)	242	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	243	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	244	0	
Support Detector Tamper (Disable=0, Enable=1)	245	1	
Zone alarm report (Refer to zone report option)	246	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	247	0	
Reserved	248-249	0	
Zone #05			
Zone Type (Refer to zone type option)	250	1	
Zone Bypass (Disable=0, Enable=1)	251	1	
Forced Arming (Disable=0, Enable=1)	252	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	253	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	254	0	
Support Detector Tamper (Disable=0, Enable=1)	255	1	
Zone alarm report (Refer to zone report option)	256	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	257	0	
Reserved	258-259	0	
Zone #06			
Zone Type (Refer to zone type option)	260	1	
Zone Bypass (Disable=0, Enable=1))	261	1	
Forced Arming (Disable=0, Enable=1)	262	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	263	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	264	0	
Support Detector Tamper (Disable=0, Enable=1)	265	1	
Zone alarm report (Refer to zone report option)	266	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	267	0	
Reserved	268-269	0	

Zone #07			
Zone Type (Refer to zone type option)	270	1	
Zone Bypass (Disable=0, Enable=1)	271	1	
Forced Arming (Disable=0, Eanble=1)	272	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	273	0 EN=0	
Zone alarm lock out time (disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	274	0	
Support Detector Tamper (Disable=0, Enable=1)	275	1	
Zone alarm report(Refer to zone report option)	276	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	277	0	
Reserved	278-279	0	
Zone #08			
Zone Type (Refer to zone type option)	280	1	
Zone Bypass (Disable=0, Enable=1)	281	1	
Forced Arming (Disable=0, Enable=1)	282	1 EN=0	
Silent Alarm (Enable=1, Disable=0)	283	0 EN=0	
Zone alarm lock out time (Disable=0, 1 times=1, 3 times=2, 6 times=3, alarm duration=4)	284	0	
Support Detector Tamper (Disable=0, Enable=1)	285	1	
Zone alarm report(Refer to zone report option)	286	6 EN=1/5/6/7	
Zone Chime Mode (Enable=1, Disable=0)	287	0	
Reserved	288-289	0	

Zone Types

Zone Type	Description
0	Zone not used
1	Instant
2	Interior Instant
3	Delay
4	Interior Delay
5	Follower
6	Interior Follower
7	24-Hour
8	Tamper
9	Fire
10	External Fault
11	Bolt Contact
12	Key Switch Toggle
13	Key Switch on/off

10.5 Output Programming

10.5.1 Keypad Buzzer

Location 370	Location	**Default**	
Keypad beeps when siren on 1=Disable, 1=Enable	370	0	

10.5.2 Warning Device 1/ OC1 Output

Output 1	**Location**	**Default**	
Event type (fixed value)		3 EN	
Polarity Mode (0=Steady, 1=Pulse)	371	0 EN=0	
Output Duration (001-999sec/000=on)	372-374	000 EN=180	

NOTICE!
When the triggered zone is programmed as silent zone, keypad output and OC1 output do not response. Other outputs are as normal.

10.5.3 Warning Device 2 / OC2 Output

Output 2	**Location**	**Default**	
Event type (Refer to output events option)	375	3 EN=3	
Polarity Mode (0=Steady, 1=Pulse)	376	0 EN=0	
Output Duration (001-999sec/000=on)	377-379	000 EN=180	

10.5.4 Optional Relay Output / OC3

Optional Relay Output			
Event Type (Refer to output events option)	380	0	
Polarity Mode (0=Steady, 1=Pulse)	381	0	
Output Duration (001-999sec/000=on)	382-384	030	

10.5.5 DX3010 Output

Location	**Location**	**Default**	
Relay Output 1			
Event Type (Refer to output events option)	385	0	
Polarity Mode (0=Steady, 1=Pulse)	386	0	
Output Duration (001-999sec/000=on)	387-389	030	
Relay Output 2			
Event Type (Refer to output events option)	390	0	
Polarity Mode (0=Steady, 1=Pulse)	391	0	
Output Duration (001-999sec/000=on)	392-394	030	
Relay Output 3			
Event Type (Refer to output events option)	395	0	
Polarity Mode (0=Steady, 1=Pulse)	396	0	
Output Duration (001-999sec/000=on)	397-399	030	

Relay Output 4			
Event Type (Refer to output events option)	400	0	
Polarity Mode (0=Steady, 1=Pulse)	401	0	
Output Duration (001-999sec/000=on)	402-404	030	
Relay Output 5			
Event Type (Refer to output events option)	405	0	
Polarity Mode (0=Steady, 1=Pulse)	406	0	
Output Duration (001-999sec/000=on)	407-409	030	
Relay Output 6			
Event Type (Refer to output events option)	410	0	
Polarity Mode (0=Steady, 1=Pulse)	411	0	
Output Duration (001-999sec/000=on)	412-414	030	
Relay Output 7			
Event Type (Refer to output events option)	415	0	
Polarity Mode (0=Steady, 1=Pulse)	416	0	
Output Duration (001-999sec/000=on)	417-419	030	
Relay Output 8			
Event Type (Refer to output events option)	420	0	
Polarity Mode (0=Steady, 1=Pulse)	421	0	
Output Duration (001-999sec/000=on)	422-424	030	

Set all 8 event type options to 0 if you do not use DX3010 relay module.

Event Type	Description
0	No output activate for the events
1	System Disarmed
2	System Armed
3	System Alarm
4	Entry/Exit Delay Warning
5	Telephone Line Fail
6	AC Lost
7	Battery Low
8	RF Power Fault
9	TAMPER
10	External Fault
11	All Faults
12	Away armed
13	Stay armed
14	Reset
15	24h Alarm

Table 10.1 Output Events Option

10.6 Installer/User Code Programming

Each installer/user code unit contains up to 4 digits. Each digit range is 0-9. Default first digit as data 15 means Not Used. Other data are not permitted.

10.6.1 Installer code # 0

Location 425-428	Location	Default	
	425	1	
	426	2	
	427	3	
	428	4	

Installer Code is used to program the system.

10.6.2 User Codes

Location 430-509	Location	Default	
User Code #01	430	2	
	431	5	
	432	8	
	433	0	
User #02	435-438	15	
User #03	440-444	15	
User #04	445-449	15	
User #05	450-454	15	
User #06	455-459	15	
User #07	460-464	15	
User #08	465-469	15	
RF User #09	470-474	15 EN=15	
RF User #10	475-479	15 EN=15	
RF User #11	480-484	15 EN=15	
RF User #12	485-489	15 EN=15	
RF User #13	490-494	15 EN=15	
RF User #14	495-499	15 EN=15	
RF User #15	500-504	15 EN=15	
RF User #16	505-509	15 EN=15	

11 Troubleshooting

Trouble	Causes & Measures
No immediate response from zone testing right after powered up.	– To work normally, operate the system one minute after powered up.
No indication on keypad after powered up.	– Check that the AC Mains power and battery fuse are correctly connected and work normally. – Check the Bosch Bus RBGY are correctly connected.
No response from the keypad (Press any key sounds error).	– Check the Bosch Bus RBGY are correctly connected. – Enter wrong code more than limit, the keypad is lockout for 3 minutes. – Wrong jumper in using two keypads at the same time. – When one keypad is used, the other one can be used only 30 seconds later.
Can not enter into programming mode after powered up.	– System is in alarm state. E.g. Switch tamper or 24-Hour zone is still not ready. – System is in arming state. Programming mode can only be operated in disarming state. – Installer is not enabled from User
No indication on on-board LED .	– AC Mains power or the battery is failed. Restore the power. – The board is damaged. Change a new one.
Zone Leds are always on.	– Check that the zones are correctly connected. – Check that the sensors work normally. – Check that the EOL resistor is correctly connected with the sensor.
Fault Led is always on / flashing.	– Time and date are not set. – No battery or the battery is lower than 12V. – No siren (>1,2 K resistor can replace the siren). – Telephone number is not correctly programmed. – Not connect with the telephone network. – Switch tamper is not connected. Otherwise the short jumper is connected. – Some plug-in module is not used in programming, such as DX3010, DX4020 or DX4020G. Refer to Installation Guide for detailed measures.
AC Mains power fuse is broken.	– Check the transformer 18V wire is correct.
Over current protection in Aux power.	– Check the 12V Aux power wiring is correct. – Check if the Aux power service is higher than 900mA (top limit to control panel). If so, the peripheral is supplied by additional power supply.
Aux power can not restore after short circuited.	– Restart the AC Mains power and battery.

Trouble	Causes & Measures
Battery fault still indicates after replaced with new battery.	– System test the battery each time arming or every time set in location 131. Only after the testing canthe battery fault can be cleared away. – Voltage of the new battery can reach to the normal 12V after it is charged for some time.
System do not dial in alarming.	– Check if the dialing function is switched off in communication programming (Telephone number and transmission format need to be programmed).
No remote arming function.	– Check if the function is switched off (Do not set Location 152 and 153 as 0).
No RPS software function.	– Check if the function is switched off (Do not set Location 152 and 153 as 0).
Abnormal in PSTN/ Domestic dialling communicaiton.	– When extention system is used in telephone network, dialing delay needs to be added in programming. – Network supports the ADSL at the same time, the control panel needs to be connected through the ADSL filter .

Glossary

0...9

24-Hour Zone	A monitored input where tamper switches and emergency switches can be connected. If one of the these switches is violated at any time (whether the system is armed or disarmed), an alarm is reported.

A

alarm condition	The status when an alarm system is armed and one of the detection devices is violated. A 24-Hour zone (for example, a smoke detector) can activate when the system is armed or disarmed.
armed	A status in which the system is ready to accept alarms.
AWAY Mode	The mode used to arm your system when you leave your premises.
AWAY or #	A keypad button used to execute any given command.

D

detector	An accessory unit in a security system designed to detect an intruder within a protected area. Some common forms of detection devices are passive infrared, smoke, photo electric beams, reed switches, and vibration sensors.
disarmed	A system status that does not accept alarms, except for 24-Hour zones.

dynamic battery testing A method used to monitor and test the condition of your backup battery.

E

entry delay	A programmed delay of the system alarm reponses that allows a person to enter a building through the entry door to turn the system off.
entry warning	The beeping from a keypad during an entry delay as a reminder to disarm the system.
exit delay	A programmed delay of the system alarm responses that allows a person to leave a building after turning the system on.
external equipment	Any device connected to a security system, such as detector, keypad or siren.

F

follow delay	If a system is armed and Zone 1 is violated, the entry delay starts timing. If Zone 2 is violated, the entry delay time is handed over to the Zone 2 and so on, to Zone 3 and 4. This is known as sequential follow delay.
fored arming	A method of overriding the safety feature that prevents arming with a faulted zone on a control panel.

H

Hand-held radio remote keyfob A device used to arm and disarm a security system or to cause a panic alarm.

K

Keypad	A device that allows you to perform all functions such as arming, disarming, and programming of your alarm system.

L

lockout siren	A siren that activates only once per zone arming cycle.

M

master code	A numeric code used for arming and disarming the system, and for allowing access to all functions available throuth the keypad.
monitoring station	A secure location where a digital receiver monitors a number of alarm systems and deciphers their alarm transmission reports so the operator can advise the appropriate authorities to take immediate action.

P

panic	A condition or type of alarm in which the user requires either immediate police or medical assistance.

R

remote radio user code	A code used to arm and disarm from a remote location, using hand-held keyfobs in AWAY Mode or STAY Mode. Remote panic alarms are also allowed.

S

sealed	Refers to a zone's status. If a zone is sealed, the detection devices are not violated and the zone indicator is not lit (that is, a reed switch is closed or a detector is on standby waiting for an intrusion).
silent alarm	An alarm that sounds only at a remote location, and gives no obvious local indication that an alarm was sent out.
STAY Mode	A condition that automatically isolates certain zones when the security system is armed in this mode.

U

unsealed	Refers to a zone's status. If a zone is unsealed, the detection devices are violated and the zone indicator is lit (that is, a reed switch is open or a detector noted an intrusion).
user code	A numeric code used to arm and disarm the system.

Z

zone	A monitored input used to activate an alarm. A zone might be set up to activate an alarm only when the system is armed or to operate whether the system is armed or disarmed.